

**MERLIN 2000**

# **Service & Parts Manual**

***Includes:***

**Major Parts Explanation, Vendor Installation, Programming,  
Troubleshooting Tips and Exploded Parts Views with Part Numbers**

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## **SECTION 1: GENERAL INFORMATION**

### ***INTRODUCTION***

Thank you for the purchase of your “new” Royal “MERLIN 2000” can / bottle vendor. We are sure you will be pleased with it, as it is one of the most reliable vendors in the marketplace today.

This manual contains installation, operation and service information for your Royal can / bottle “MERLIN 2000” vendor. To become familiar with your “new” vendor it is suggested that this manual be read in it’s entirety.

At *ROYAL VENDORS*, our objective is not only to provide you with a strong, reliable vendor, using only the highest quality, environmentally safe materials, but is also to provide you with first class service in a timely and cost-effective manner.

### ***MERLIN FEATURES***

- Multi-price / Single price capability for each selection ranging from \$.00 to \$99.99
- Delivery chute sensor senses actual product delivery
- Cash accountability to \$999,999.99 (non-resettable) (version 2.00 and higher only)
- Product unit sales accountability to 99,999,999 (non-resettable) (version 2.00 and higher only)
- Product unit sales by selection (resettable) (5.07 and higher revisions only)
- Accepts optional timer to restrict sales per selection to a preset time (revision 2.00 and higher only)
- Optional setting for forced purchase or full escrow to vend
- Optional setting for bill validator escrow (5.07 and higher revisions only)
- Built in tip switch for an optional alarm in case the vendor is rocked or tipped (version 5.00 and higher only)
- Quick vend in less than 2 seconds
- Vend process begins at light speed. There is no need to hold select button while waiting for motor to run
- Merlin will search for a package even with a miss-load. It will get vends that a electro-mechanical can’t
- In the case of a jam or sold-out, the board will cut power to the vend motor after 10 seconds and maintain credit for another selection... Vend motors do not cycle on overload and customers are not cheated.
- Merlin does not need vend timing cams, motor switches or sold-out switches. Fewer parts and simpler wiring enhance reliability.
- Management information system is included in the control board and can be accessed by hand held computer (H.H.C.) or lap top computer through an optional installed jack. An optional external jack is available beginning with version 5.07

**UNIT MARKINGS**

**VENDOR IDENTIFICATION** - Your vendor can be identified by the serial plate which is mounted on the outer left side of the vendors main door (fig. 1a). The serial plate gives valuable information which is necessary when ordering parts or calling for technical service.

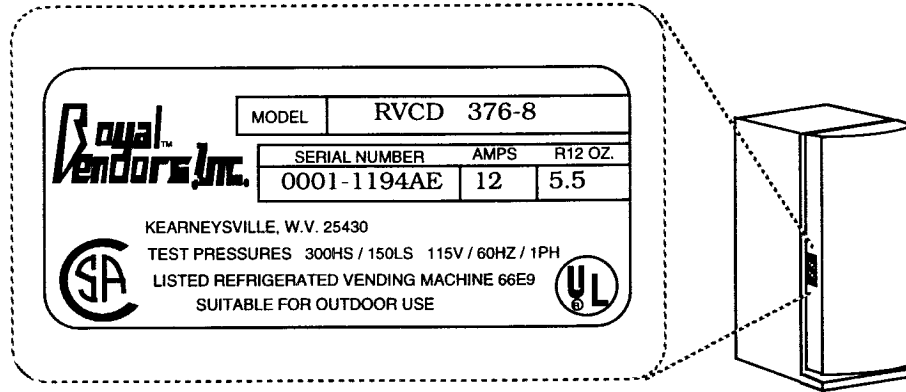


fig. 1a

**Common Models:**

- RVCDE = ROYAL VENDORS COLD DRINK ELECTRONIC (ALL GENERIC MODELS)
- RVCCE = ROYAL VENDORS COCA-COLA ELECTRONIC
- RVMCE = ROYAL VENDORS MAGNUM CURVE ELECTRONIC (PEPSI-COLA)
- RVDPE = ROYAL VENDORS DR. PEPPER ELECTRONIC

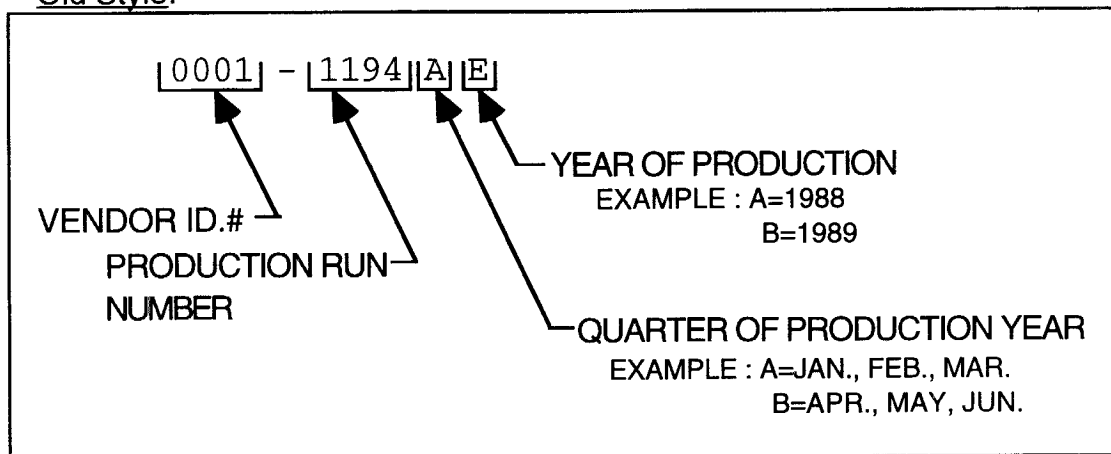
**Model Numbers: (example)**

376-8 = Your vendor will hold a maximum of THREE HUNDRED AND SEVENTY SIX 12 oz. cans (In the vending mechanism), and has EIGHT selections.

**Serial Numbers:**

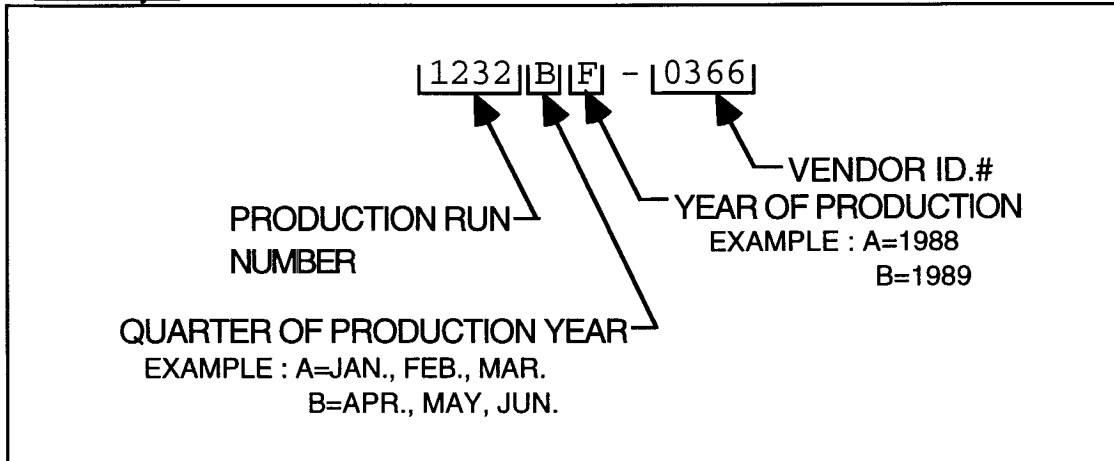
There are currently two styles of serial numbers in use. Picking the style of serial number that matches yours, use the following illustrations to read your serial number.

**Old Style:**



OR

New Style:



**REFRIGERATION IDENTIFICATION** - Your vendor's refrigeration system can be identified by noting the refrigeration serial plate which is mounted to the base plate of your refrigeration system (fig.1b). This also gives information which is necessary when ordering a replacement refrigeration unit, or when calling for service help concerning one.

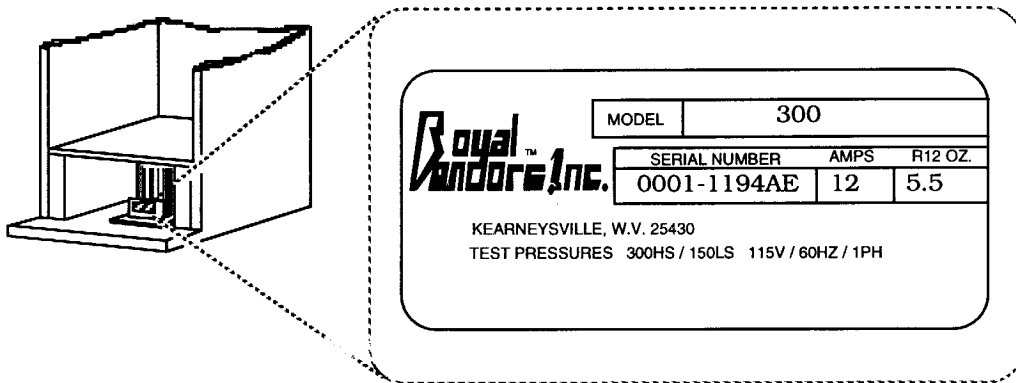


fig.1b

**note:** Shown is the "new" style condenser.

Common Model Numbers:

- 400 = R12 1/4 HORSEPOWER COMPRESSOR (USED IN NARROW VENDORS)
- 300 = R12 1/3 HORSEPOWER COMPRESSOR (USED IN MID-SIZE VENDORS)
- 800 = R12 +1/3 HORSEPOWER COMPRESSOR (USED IN TRIPLE DEEP VENDORS)
- 4000 = 134A 1/4 HORSEPOWER COMPRESSOR (USED IN NARROW VENDORS)
- 3000 = 134A 1/3 HORSEPOWER COMPRESSOR (USED IN MID-SIZE VENDORS)
- 8000 = 134A +1/3 HORSEPOWER COMPRESSOR (USED IN 3 DEEP VENDORS)

**WARRANTIES****WARRANTY** (To the original purchaser)

We warrant the vend motors for five years and three months. The refrigeration system, consisting of the fan motors, compressor, evaporator, "clean-flo" condenser and the refrigerant tubing, we will warrant for five years and three months. Any unauthorized tampering with or cutting (tapping) into will void the warranty. The control board (controller) and the L.E.D. display are both warranted for three years. All other parts except for the light bulbs and finish are warranted for one year and three months.

Royal Vendors' obligation under warranty is limited to repairing or replacing the subject part at our option, when upon examination it was determined by Royal Vendors to be defective. Royal Vendors will pay shipping charges on all parts covered under this warranty when transportation has been made the most economical way.

The warranty is voided when a cabinet or any part thereof has been subject to misuse or alteration without proper authorization. Accident or damage caused by fire, flood, transportation, civil disorder, or act of God is not covered under warranty.

**CREDIT AND REPLACEMENT POLICY**

CREDITS OR REPLACEMENTS WILL BE ISSUED ON WARRANTY ITEMS IF THE PROPER PROCEDURES ARE FOLLOWED:

1. ROYAL VENDORS will pay shipping charges on all parts covered under this warranty when transportation has been made the most economical way. (Ex. within the continental U.S. regular ground UPS). An A.R.S. (Authorized Return Service) sticker will be sent with all warranty parts. This method of shipping is preferred for returning parts to Royal. (Refer to alternative methods on the back of this page).
2. Credits will only be issued to warranty parts that have been ordered in advance. Not for parts ordered as stock. (NO EXCEPTIONS)
3. Return material tags are provided for sending back warranty parts. Please fill out the tag completely, keeping the white copy for your records and sending the yellow tag back attached to the part. Please make sure that you have your complete name, company name, address, phone number, serial number, and model number for each item, along with a brief explanation of the problem.
4. When ordering warranty parts in advance, please have the full vendor / unit serial number.
 

**Within the continental U.S:** When returning parts for credit send a copy of the return material tag and packing slip. Make sure the serial numbers match that of the advanced order. This will insure proper credit.

**Alaska, Hawaii and International customers:** Need only to send back the system serial tag and the compressor tag for refrigeration units. Control boards should be sent back the most economical way along with a copy of the packing slip, return material tag and the proper serial number. This will insure proper credit.
5. If the item returned is not under warranty, it will be sent back to you at your expense or it will be scrapped.
6. All warranty parts should be properly wrapped and packed securely to avoid further damage. Refrigeration units that are returned from the field and have been tapped into, tampered with, not packaged properly or have had the serial plate removed, will void the warranty.

## SECTION 2: VENDOR COMPONENT EXPLANATION

### CONTROL BOARD

The "Merlin" control board is located inside the upper left corner of the vendors main door and is the focal point of all vendor operations. the controller requires 24 volts AC provided by a low-voltage transformer.

The control board receives information from input devices such as select switches, door switch, control board mode button(s), etc., and issues instructions to output devices such as the digital display (L.E.D.) and vend motors. Devices such as the coin mechanism and optional bill validator communicate both ways with the controller.

CONTROL BOARD IDENTIFICATION (fig. 2a) - The "Merlin" control board is identified by a version/revision number that is printed on a small white decal which is located near the center of the control board on the EPROM chip.

The "Merlin" vendor offers three different versions of domestic electronic control boards. Due to the different pin configurations not all control boards are interchangeable. please use the following list to find a compatible controller.

**note:** For a detailed layout of all versions of control boards please refer to section 4: points of interest "control board pinouts"

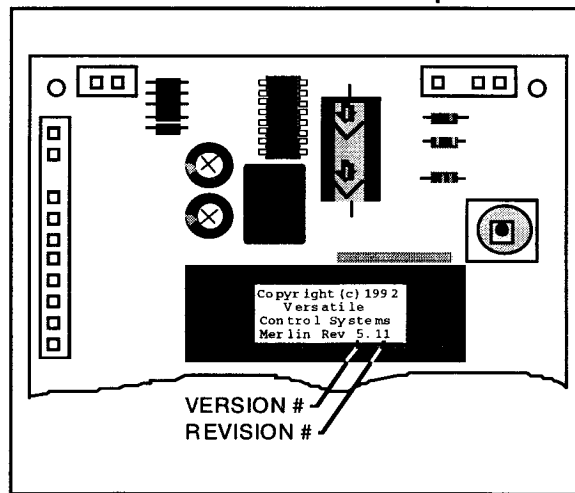


fig. 2a

CONTROL BOARD COMPATIBILITY -The current version 5 controller can replace the following:

- All version 5 control boards as a direct replacement
- All version 1 & 2 control boards when using adapter harnesses
  - Vend Motors interface harness - 842,065,001
  - Validator interface harness - 842,066,001

The version 2 control boards are compatible with all version 1 control boards of revision 1.10 and greater

All revision 1.09 control boards are compatible with control boards of equal or lesser revision value

### CURRENT WARRANTY REPLACEMENTS -

If your controller is within this range

1.00 to 1.09  
1.10 to 1.99  
2.00 to 2.99  
5.00 to 5.06  
5.07 to 5.11

We stock

1.09c  
1.16a  
2.16a  
5.06  
5.11

The above listing is possible to change from time to time. Consult your local representative for more information.



**L.E.D. DISPLAY**

The "Merlin" series vendor is currently equipped with a low voltage L.E.D. display, the display gives the customer a vend price (if set for single price) or ".00" (if set for multi-price). It is also in charge of displaying "sold out" to the customer if his/her selection is sold out or jammed. In the service mode the L.E.D. display allows the user to receive can/cash counts (versions 2 & 5 only). It also allows the user to set the vendor up or test the vendor.

There are two types of displays and they are not interchangeable. Please use the below listing to match a L.E.D. display to a controller:

<u>DESCRIPTION</u>	<u>PART NUMBER</u>	<u>USAGE</u>
"old style" L.E.D.	836,005,001	1.09 or lesser revision
"new style" L.E.D.	010,593,014	1.10 and greater revision

The display receives information / voltage from the control board via the L.E.D. lead . It is a four wire harness that connects directly between the vendors control board and the L.E.D. display (see control board pinouts).

**LOW VOLTAGE TRANSFORMER**

The low voltage transformer is located in the lighted section of the vendors main door, It is a 75 VA transformer that converts conventional 110 volts to 24 volts AC which is what the control board requires. The transformer has a 3 1/2 amp internal fuse on the secondary circuit to protect the board and coin mechanism.

If the fuse would ever blow, you would lose all power to the board, thus noticeably loosing power to the L.E.D. and the coin mechanism for acceptance

**DELIVERY CHUTE SENSOR**

The delivery chute sensor is mounted on the bottom center of the vendors delivery chute. It has a built-in harness that connects to the sensor connection of the vendors control board. The harness is made of shielded cable and should never be cut, spliced or pinched. if the harness is ever cut, spliced or pinched you may see premature cancellation of credit.

**IMPORTANT NOTE:** For the most part the delivery chute sensor acts on all columns equally, therefore if a vending problem (multi or dry vend) exists on individual columns check depth settings and options settings.

Directly above the sensor connection you will find the sensor adjustment screw (trimpot), and directly above it is the sensor adjustment L.E.D.

To adjust the sensor:

1. Turn the adjustment screw clockwise until the adjustment L.E.D. comes on
  2. Turn the screw counter-clockwise until the L.E.D. just goes out
- Revision 1.07 and greater
3. Continue to turn the screw two full turns counter-clockwise from this point.
- Revision 1.07 and less
3. Continue to turn the screw 1/4 turn counter-clockwise from this point.

For fine adjustment:

- 1/4 turn clockwise for more sensitive (to cure multi-vend)
- 1/4 turn counter-clockwise for less sensitive (to cure dry vends)

**DOOR SWITCH (RESET SWITCH)**

The vendors door switch is mounted on the lower right side of the vendors cooling compartment, it is actuated every time the vendors main door is opened or closed. Its "2 wire" harness connects at the "options" connection of the vendors control board. The door switch runs off of ground, so very little voltage is required.

The door switch does the following each time it is actuated:

- Clears "sold out" conditions (caused by sold outs or jams)
- Activates service / sales modes (counters show in service mode)
- Resets learning mode (version 1&2 and some 5 boards)
- Allows access to "set-up" modes (version 5 boards only)

**COIN MECHANISM (CHANGER)**

The coin mechanism determines the validity and value of each coin that is inserted into the vendor and sends the coin information to the vendors control board. The coin mechanism also continuously informs the controller of the level of the coins in the coin tubes to be used for change. All change tube status and credit information is accumulated in the vendors control board. At this point, the vendors control board is responsible for lighting the correct change indicator lamp in the case that the changer does not have change to payback, if the coin mechanism is disconnected, or if the changer harness is cut or disconnected.

With the Merlin vendor the prices are set through the vendors control board via programming, NOT through the changer. The control board is also in charge of initiating coin payout. Change is paid out through the three D.C. operated solenoid slides when payback is required. Manual coin payout is done using the vendors control board (see testing the vendor, section 3). If further coin mechanism information is required, refer to your separate operation and service manual for your type of coin mechanism or contact your local coin mechanism representative.

The Merlin control board will interface with the following 24 volt coin mechanisms: (This list can be found inside the vendors main door)

THE FOLLOWING IS A LIST OF COIN MECHANISM MANUFACTURERS AND MODEL NUMBERS OF COIN MECHANISMS INTENDED FOR USE WITH THIS VENDOR. THE VENDOR IS NOT TO BE OPERATED WITHOUT ONE OF THESE COIN MECHANISMS

COIN ACCEPTORS, INC. MODELS 9302-L, 9302-LF AND 9342-L.

MARS ELECTRONICS MODELS TRC-6010

MAKA CORPORATION MODELS USX-002 AND USXP-002  
**ROYAL VENDORS, INC.**

**CAUTION: All coin mechanisms are 24 volts AC only, never plug or unplug the coin mechanism or any other electrical component with power applied**

### ***VEND MOTORS***

Your Merlin vendor is equipped with a 110 volt vend motor for each column. There are two types of vend motors that may be used in your vendor, these vend motors are not interchangeable. Both types of motors do not use vend timing cams nor vend motor switches (as electro-mechanical vendors do). It is the job of the delivery chute sensor to signal the control board to cancel product delivery upon can impact.

#### **WIDE COLUMN vend motor**

A wide column vend motor assembly can be determined by noting the linkage arm assembly which is mounted to the rear of the vend motor. The linkage arm is used to drive the vend mechanisms oscillator (1 per wide column) in a “back and forth” motion to deliver product.

#### **“NARROW COLUMN” vend motor**

A narrow column vend motor is thicker than a wide column vend motor. This is because a narrow column vend motor and rotor must lift the complete column of cans upon reloading, this requires a stronger vend motor.

A narrow column vend motor can be noted by the pin on the rear of the vend motor that drives the vend mechanisms rotor in a “circular” motion to deliver product.

### ***REFRIGERATION SYSTEM (see section 1: general information; unit markings for models)***

#### **COMPRESSOR**

- The compressor motor is a hermetically sealed unit located beneath (outside) the cooling compartment. The compressor is a pump, driven by the compressor motor which draws low pressure vapor (refrigerant) from the evaporator coil, compresses it, and forces it into the condenser under high pressure. The motor is started and controlled by the temperature control.

#### **CONDENSER**

- The condenser coil is located beneath (outside) the cooling compartment next to the compressor (can be seen from the front with the door open). The condenser removes heat from the high pressure vapor discharged from the compressor and condenses it to a high pressure liquid. The condenser and evaporator coils have aluminum fins attached to effectively increase their heat exchange surfaces.

#### **STARTING RELAY**

- The starting relay is mounted on the side of the compressor housing. The compressor motor has two windings, a start and a run winding. To give the motor torque when it first starts, the starting relay switches in the additional start winding. After the motor gets up to speed the relay opens the start winding and the motor continues using only the run winding.

#### **THERMAL OVERLOAD**

- The thermal overload is a heat sensitive device mounted on the side of the compressor housing. If the compressor motor gets too hot or draws an excessive amount of current, the thermal overload will open, breaking the circuit to the compressor. After the compressor cools to a safe operating temperature, the thermal overload will close allowing the compressor and condenser fan motors to restart.

### CONDENSER FAN & MOTOR

- The condenser fan & motor, located beneath the cooling department, is a forced air device that uses outside ambient air to cool the surface of the condenser coil. The condenser fan motor runs while the compressor runs.

### EVAPORATOR

- The evaporator coil is located in the cooling compartment. As low pressure liquid passes through the evaporator coil, it absorbs and removes heat from the compartment as it changes to vapor. The condenser and evaporator coils have aluminum fins attached to effectively increase their heat exchange surfaces.

### EVAPORATOR FAN & MOTOR

- The evaporator fan & motor is a forced air device that circulates air throughout the cooling compartment and over the heat exchange surface of the evaporator coil. The evaporator fan motor run continually.

### CAPILLARY TUBE

- The capillary tube is located in the refrigerant line, between the condenser and evaporator coils. The small diameter tube is used as a metering device to control the flow of liquid refrigerant to the evaporator coil. This creates a low pressure causing the refrigerant to vaporize and absorb heat as it passes through the evaporator.

### DRIER

- The drier is located in the refrigerant line between the capillary tube and condenser. It traps and removes moisture from the refrigeration system while allowing oil and refrigerant to pass through the system.

### ACCUMULATOR

- The accumulator is located in the refrigerant line between the evaporator coil and compressor. The accumulator traps any liquid refrigerant which did not vaporize before it reaches the compressor.

### TEMPERATURE CONTROL

- The adjustable temperature control is responsible for sensing temperature changes in the cooling compartment and starting the compressor motor when the compartment temperature rises above a preset setting.

- The temperature control is composed of a control switch that is actuated (opened and closed) by the mechanical movement of a bellows. The bellows is connected to a temperature sensing bulb (located in the cooling compartment) by a small diameter refrigerant tube. The bellows, temperature sensing bulb, and refrigerant tube are filled with refrigerant that reacts to temperature changes.

- When the temperature of the cooling compartment rises, the refrigerant in the sensing bulb expands forcing the bellows to close the temperature control switch. The temperature control switch turns the compressor and condenser motors ON. As the refrigeration cycle cools the compartment, the refrigerant in the sensing bulb contracts allowing the bellows to relax, actuating the temperature control switch to its open position, turning the compressor and condenser motors OFF.

### COOLING COMPARTMENT

- The cooling compartment is the sealed area of the vendor that holds the product for delivery. This area is designed to allow free flowing air to circulate throughout the product.

**THE REFRIGERATION CYCLE**

- The rising temperature in the cooling compartment heats and expands the refrigerant in the temperature control bulb, expanding the bellows. The expansion of the bellows closes the temperature control switch.
- The temperature control switch turns the compressor and condenser fan motors ON.
- The compressor circulates refrigerant throughout the system by pulling low pressure refrigerant vapor from the evaporator coil, compressing it and forcing it into the condenser coil.
- The condenser aided by the condenser fan motor, removes heat from the refrigerant as it flows through the condenser coil and releases it to the outside environment. The dropping of the refrigerant temperature changes the vapor to liquid.
- The capillary tube controls the amount of refrigerant released to the evaporator coil.
- The evaporator coil allows the liquid refrigerant to absorb heat from the cooling compartment as it evaporates in the coil.
- The falling temperature in the cooling compartment is caused by the continual circulation of refrigerant through the system, removing heat from the cooling compartment and transporting it to the outside environment. When the temperature drops, the refrigerant in the temperature control bulb contracts allowing the bellows to open the temperature control switch.
- The temperature control switch turns the compressor and condenser fan motors OFF.

**PROTECTIVE COMPONENTS: FILTER ASSEMBLY**

The Royal Vendors "Merlin" series vendor offers a 5 amp in-line filter assembly which filters out any E.M.I. (electro-magnetic interference) coming into the vendors main door and also any outgoing E.M.I. which may be emitted by the vendors controller. The filter also filters out "line spikes".

The filter assembly is located in the lower left section of the vendors base (near the main wire harness) and filters all the power going into the vendors main door. (fig. 2b)

There are two types of filter assemblies available. To find the style that fits your vendor you must first reference your vendor serial number.

If your vendor has a production run number of 1079 or less you must use the "old style" filter assembly. To order this item use part number 011,123,004

If your vendor has a production run number of 1080 or greater you must

use the "new style" filter assembly. To order this item use part number 011,124,004

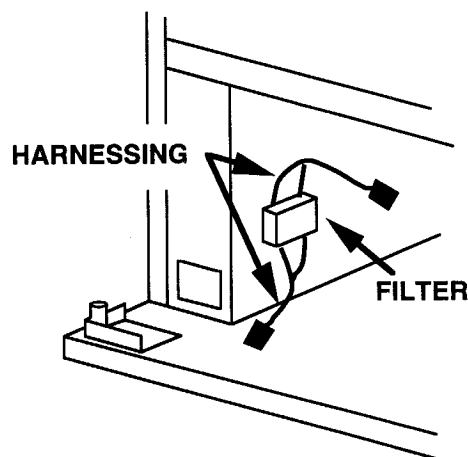


fig.2b

**PROTECTIVE COMPONENTS: IRON FERRITE BEADS****Iron ferrite bead for the ballast:**

The Royal Vendors "Merlin" series vendor offers an iron ferrite bead which is attached to the 110 volt ballast wiring. Its purpose is to eliminate electronic noise and suppress line spikes emitted by the ballast. This could be in the form of electro-magnetic interference (E.M.I.) and/or radio frequency. In general, the iron ferrite bead serves a similar purpose as that of the E.M.I. filter assembly.

The iron ferrite bead may be wired to the top of the ballast from the factory (fig. 2c); in the case that it is not you may order a "plug in" iron ferrite bead assembly, which plugs into the 2 way mate-n-lok connection that powers the ballast located in the changer plug bracket.

**Iron ferrite bead for the board:**

Royal Vendors offers an optional iron ferrite bead that will protect the vend motors circuit from any electro-magnetic interference and/or line spikes that may be traveling through the vendors main door. It will also isolate the vendors main door from any interference/line spikes emitted by the vend motors (fig. 2d).

The iron ferrite bead attaches to wires EV38 (neutral) and EV36 (110V) which carry power to the vend motors connection of your vendors controller from the 110 volt validator connection.

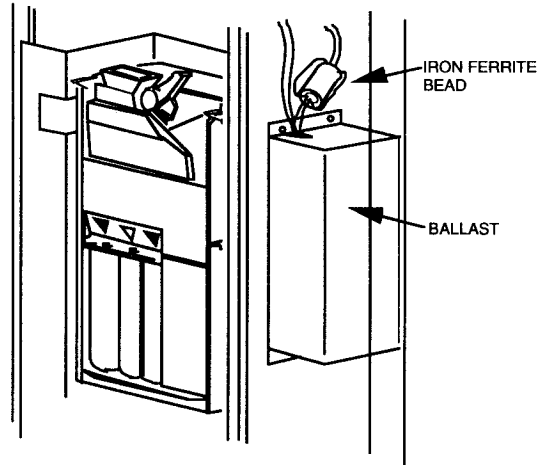


fig. 2c

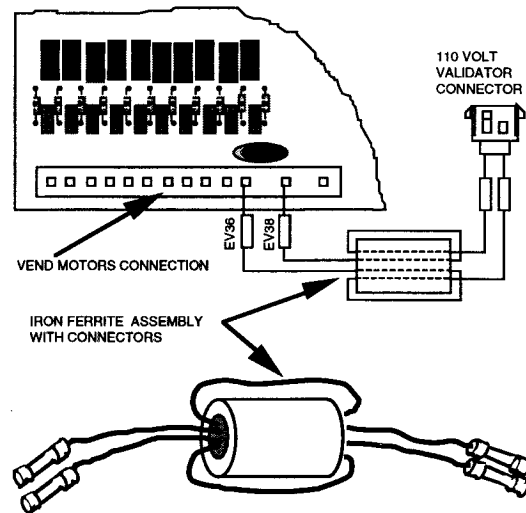


fig. 2d

**note:** Shown is a motor connection of version 5 controller, a version 2 controllers pinouts are different.

**PROTECTIVE COMPONENTS: VEND MOTORS FUSE BOX**

The vend motors fuse box assembly is located in the mid-section of the vendors main door. It is mounted in the changer plug bracket. The purpose of the fuse is to protect the control board from the vend motors in the case that they would short out. The type of fuse used is a 3AG 4 amp fast blow fuse.

If the fuse would blow, after every selection you would see "hold" for 8 to 10 seconds followed by "sold-out" or you may only see "sold-out" if the sold-outs are not reset by actuating the door switch.

In the case that your vendor does not have this fuse box assembly, you may order it as kit number 010,128,004. This kit includes instructions.

## SECTION 3: INSTALLATION AND SET-UP

### **INSTALLATION**

#### Unpack the vendor:

Unwrap the vendor and remove the padding. Check for any signs of damage at the time of delivery; if the vendor is damaged, contact the carrier immediately. The carrier will instruct you as to the procedure for filing a claim.

**note:** The vendor keys are located in the coin return cup.

**important:** Remove stretch-wrap if storing the vendor in direct sunlight

#### Removing the shipping skids:

Separate (split) each skid section by inserting either a claw hammer, crow-bar, or similar device into the slot of each section to break apart. Tilt the vendor slightly to remove the separated pieces. (fig. 3a)

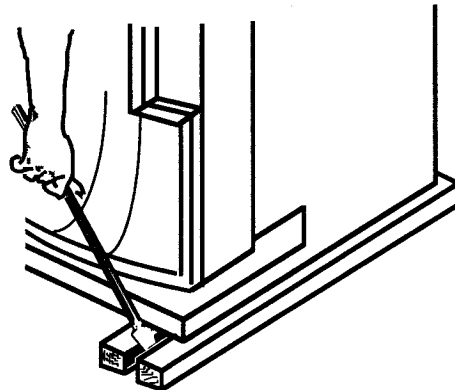


fig. 3a

#### Placing the vendor on location:

When placing the vendor on location allow for a minimum of four inches (4") of space at the rear of the vendor. This will ensure proper ventilation of the refrigeration system. (fig. 3b).

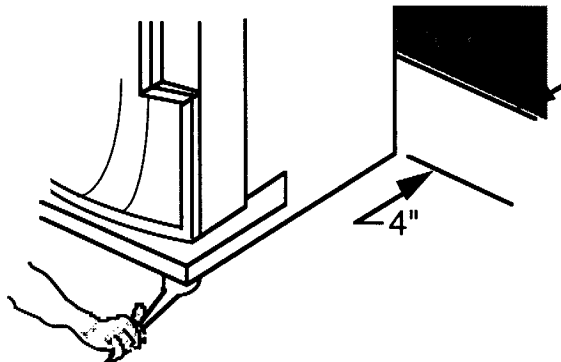


fig. 3b

#### Level the vendor:

Level the vendor by adjusting the four leveling legs on the bottom corners of the vendor. The vendor is level if the main door remains stationary when opened to different positions. The four leveling legs must be in contact with the floor. (fig. 3b). This is imperative for proper drainage of evaporator frost.

#### Voltage requirements:

The vendor is designed to operate at a voltage of 115 volts, 60 hertz. It requires a minimum of 15 amp service. The service outlet voltage must not exceed 129 VAC or fall below 103 VAC.

#### Vendor power cord:

The vendor has a three prong, three wire, grounding cord. The vendor must be plugged into a grounded electrical outlet to protect the customer from an electric shock. If you are not sure your outlet is properly grounded, have it checked by a qualified electrician.

- When you plug in your vendor you should observe the following:
  1. The florescent lights displaying the vendor will come on.
  2. The refrigeration compressor will start to run.
  3. The L.E.D. display or the "Use Correct Change Lamp" will light.

### **VENDOR SET-UP (CONTROLLER PROGRAMMING)**

This section will provide all set-up information to enable you to program your version 1,2 or 5 controller. Each version has different programming instructions, therefore it is imperative that you follow the instructions that coincide to your controllers version number

#### **Version 1 controllers**

locate your vendors control board in the upper left section inside the vendors main door.

The setup button can be found on the upper right corner of the control board. Upon pressing it the display will go blank, allowing you to set prices, enter the vend motors test mode or the vendor options mode.

Located to the right of the setup button are the (3) coin payout buttons (.05, .10, .25). The coin payout buttons allow manual payout of coins as well as to help access the vend motors test mode and the options mode.

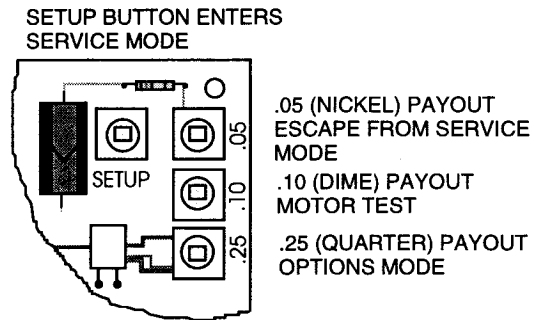


fig. 3c

**Setting Prices:** The price setting mode allows you to assign vend prices to individual selections.

To enter the set price mode press the controller setup button, as seen above (the digital display should go blank). Now choose a selection in which a price change is desired and press that select button and the price will increase in increments of 5¢.

If a decrease in price is desired, simply release the select button for at least 2 seconds and then press/hold that selection again and the price will decrease.

**Vend Motors Test:** The vend motors test mode allows you to test vend from any desired selection without the use of coins thus testing the controllers ability to power each vend motor and also its ability to cancel the vend cycle upon product delivery.

To enter the vend motors test mode first press the controller setup button, as seen above (the digital display should go blank). Now press the .10 payout button (the digital display should show "SEL"). You will now be allowed to test vend, without the use of coins, from each column as many times as desired.

When testing is completed simply press the .05 payout button and the vendor will return to a sales mode or If no functions are performed within a period of 25 seconds the controller will automatically revert to a sales mode.

**Options Mode:** The vendors options mode allows you to set optional settings such as:

- Forced purchase (must buy something) or escrow to vend (will allow payback of coins even if a vend attempt is not made)
- Whether or not to show the columns that have not sold product since the last door opening/closing (appears on the digital display upon door opening).

Since each controller may be used in a variety of different size vendors (with like revision only), it is necessary to program the control board according to the



size of the vendor so that it will operate properly. This is done in the vendors options mode by programming the number of wide columns and the total number of columns in the vendor.

To enter the vendors options mode first press the controller setup button, as seen on page 17 in figure 3c (the digital display should go blank). Now press the .25 payout button (the digital display should show "Opt"). You will now be in the options mode. To set the vendors options use the following list that corresponds to your controller revision number:

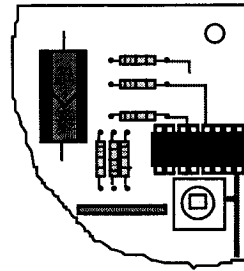
**important note:** For vendors with one less select button than the number of columns ignore the settings for the #2 selection and make sure that the sequencing of columns 1 & 2 off of selection #1 is turned on where available (rev. 1.04 and higher).

selection to be set	revisions 1.01 & 1.02	revision 1.03	revision 1.04	revisions 1.05 & 1.06	revisions 1.07 & up
1	# wide columns in vendor	# wide columns in vendor	# wide columns in vendor	# wide columns in vendor	# wide columns in vendor
2	total # columns in vendor	total # columns in vendor	unused	on = forced purchased	on = forced purchased
3	off = display price when set single	off = display price when set single	total # columns in vendor	total # columns in vendor	total # columns in vendor
4	on = forced purchase	on = forced purchase	off = display price when set single	on = display col.s not sold since last door opening	on = display col.s not sold since last door opening
5	unused	on = display col.s not sold since last door opening	on = forced purchase	on = sequence from col.s 1&2 / sel #1	on = sequence from col.s 1&2 / sel #1
6	unused	unused	on = display col.s not sold since last door opening	unused	unused
7	unused	unused	on = sequence from col.s 1&2 / sel #1	unused	unused

**Version 2 controllers**

locate your vendors control board in the upper left section inside the vendors main door (fig. 3d).

The setup button can be found on the upper right corner of the control board. You will use the setup button to access various sales and service menus.



SETUP BUTTON ENTERS SERVICE MODES

fig. 3d

- press 1 time = coin payout
- press 2 times = delivery test
- press 3 times = set prices
- press 4 times = set selection depth
- press 5 times = set sel / timer
- press 6 times = set options

Upon opening the vendors main door you will access the service mode and the L.E.D. display (on the front of the vendors door) will show the vendors cash count. (For can / cash counters refer to sect. 3 “reading the can / cash counters)

*Coin Payout* : The coin payout mode allows you to initiate coin payout through the coin mechanism using the select buttons and the control board.

To enter the coin payout mode you must first open the vendors main door, then press the controllers mode button one time and the display will show “CP” (fig. 3e) for coin payout.



fig. 3e

At this time you will be able to payout coins by using the following select buttons:

**VENDORS WITH AN EQUAL NUMBER OF SELECTIONS VS. COLUMNS**

SELECT BUTTON USED	FUNCTION
selection #3	nickel (5¢) payout
selection #4	dime (10¢) payout
selection #5	quarter (25¢) payout

**VENDORS WITH AN UNEQUAL NUMBER OF SELECTIONS VS. COLUMNS**

SELECT BUTTON USED	FUNCTION
selection #2	nickel (5¢) payout
selection #3	dime (10¢) payout
selection #4	quarter (25¢) payout

*Delivery Test* : The delivery test mode allows you to test the delivery mechanism, from the select button(s) to the controller to the vend motor.

To enter the delivery test mode you must first open the vendors main door, then press the controllers mode button two times and the display will show “dt” (fig. 3f) for delivery test.



fig. 3f

At this time you will be able to test vend from any desired selection without the use of money and without adding to can and cash counters.

**Set Prices:** The set prices mode allows you to establish a vend price for each individual selection ranging from .00 to \$12.75 (you must set a price for each selection button).

To enter the set price mode you must first open the vendors main door, then press the controllers mode button three times and the display will show "sp" (fig. 3g) for set pricing.



fig. 3g

At this time you will be able to set prices for each individual selection. First you must choose the selection in which a price change is desired. Next you must press / hold that select button and the current price for that selection will increase in increments of .05. To decrease in price you must release the selection button (for greater than two seconds) and then press / hold it again and the price will decrease in increments of .05.

**Set Selection Depth:** The depth setting allows you to set each individual selection for either single, double or triple depth. This allows you to vend different length packages from any selection / column. Available settings are 1, 2 or 3

**important note:** If individual depth settings are not set appropriately, vending problems will result.

To enter the set depth mode you must first open the vendors main door, then press the controllers mode button four times and the display will show "sd" (fig. 3h) for set selection depth.



fig. 3h

At this time you will be able to view / set the depth for each individual selection (and any columns controlled by that selection). First you must choose the selection in which you wish to view or change. To view the current depth setting for that selection you must press and release the select button (the display will show 1, 2, or 3). To change the current setting you must press and hold in on the select button and the depth will increase in increments of 1.

**Set Selection Timer :** The timer setting is to be used with the optional timer kit. It gives you to option to turn off some selections while keeping others operational (selections not operational will show "not sold") or to turn off all selections (display shows "not sold" during timer shutdown).

**important note:** If the optional timer is not connected to the controller, the set timer mode settings will not effect anything.

To enter the set timer mode you must first open the vendors main door, then press the controllers mode button five times and the display will show "st" (fig. 3i) for set timer.



fig. 3i

At this time you will be able to view / set the timer setting for each individual selection. First you must choose the selection in which you wish to view or change. To view the current timer setting for that selection you must press and release the select button (the display will show "on" or "off"). To change the current setting you must press and hold in on the select button and the current timer setting will change. Each selection must be set individually.

**Vendor Options Mode :** Since each controller may be used in a variety of different size vendors (with like revision compatibility only), it is necessary to program the control board according to the size of the vendor that it is in so that it will operate properly. This is done in the vendors options mode by programming the number of wide columns and the total number of columns in the vendor. The options mode is also used to program certain features

To enter the set options mode you must first open the vendors main door, then press the controllers mode button six times and the display will show "opt" (fig. 3i) for options.



fig. 3i

**important note:** For vendors with one less select button than the number of columns ignore the settings for the #2 selection.

selection to be set	function
1	# of wide columns in vendor
2	on = forced purchase / Off = escrow
3	total # of columns in vendor
4	on = display columns not sold since the last door open / close
5	on = sequence of vending from columns 1 & 2 from selection #1

**Version 5 controllers**

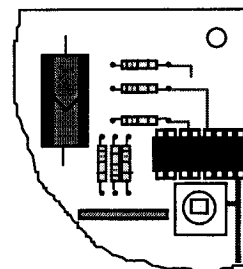
locate your vendors control board in the upper left section inside the vendors main door (fig. 3d).

The setup button can be found on the upper right corner of the control board. You will use the setup button to access various sales and service menus.

- press 1 time = coin payout
- press 2 times = delivery test

*Hold in on door switch to access the below modes*

- press 3 times = set prices
- press 4 times = set selection depth
- press 5 times = set sel / timer
- press 6 times = set options



SETUP BUTTON ENTERS SERVICE MODES

fig. 3d

Upon opening the vendors main door you will access the service mode and the L.E.D. display (on the front of the vendors door) will show the vendors can count. (For can / cash counters refer to sect. 3 "reading the can / cash counters)

**Coin Payout :** The coin payout mode allows you to initiate coin payout through the coin mechanism using the select buttons and the control board.

To enter the coin payout mode you must first open the vendors main door, then press the controllers mode button one time and the display will show "CP" (fig. 3e) for coin payout.

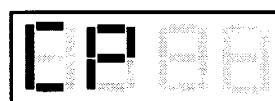


fig. 3e

At this time you will be able to payout coins by using the following select buttons:

**VENDORS WITH AN EQUAL NUMBER OF SELECTIONS VS. COLUMNS**

SELECT BUTTON USED	FUNCTION
selection #3	nickel (5¢) payout
selection #4	dime (10¢) payout
selection #5	quarter (25¢) payout

**VENDORS WITH AN UNEQUAL NUMBER OF SELECTIONS VS. COLUMNS**

SELECT BUTTON USED	FUNCTION
selection #2	nickel (5¢) payout
selection #3	dime (10¢) payout
selection #4	quarter (25¢) payout

*Delivery Test* : The delivery test mode allows you to test the delivery mechanism, from the select button(s) to the controller to the vend motor.

To enter the delivery test mode you must first open the vendors main door, then press the controllers mode button two times and the display will show "dt" (fig. 3f) for delivery test.



fig. 3f

At this time you will be able to test vend from any desired selection without the use of money and without adding to can and cash counters.

**To access the remaining menus (set price, set depth, set timer & options) you must hold in on the door switch while pressing the mode button.**

*Set Prices*: The set prices mode allows you to establish a vend price for each individual selection ranging from .00 to \$99.99 (you must set a price for each selection button).

To enter the set price mode you must first open the vendors main door, then while holding in the door switch, press the controllers mode button three times and the display will show "sp" (fig. 3g) for set pricing.

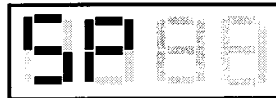


fig. 3g

At this time you will be able to set prices for each individual selection. After choosing the selection in which a price change is desired you must press / hold that select button and the current price for that selection will increase in increments of .01 for the first 9 times and then .10 each time thereafter. To decrease in price you must release the selection button (for greater than two seconds) and then press / hold it again and the price will decrease.

*Set Selection Depth*: The depth setting allows you to set each individual selection for either single, double or triple depth. This allows you to vend different length packages from any selection / column. Available settings are 1, 2 or 3.

To enter the set depth mode you must first open the vendors main door, then while holding in the door switch, press the controllers mode button four times and the display will show "sd" (fig. 3h) for set selection depth.



fig. 3h

**important note:** If individual depth settings are not set appropriately, vending problems will result

At this time you will be able to view / set the depth for each individual selection (and any columns controlled by that selection). First you must choose the selection in which you wish to view or change. To view the current depth setting for that selection you must press and release the select button (the display will show 1, 2, or 3). To change the current setting you must press and hold in on the select button and the depth will increase in increments of 1.

**Set Selection Timer :** The timer setting is to be used with the optional timer kit. It gives you to option to turn off some selections while keeping others operational. (selections not operational will show "not sold") or to turn off all selections (display shows "not sold" during timer shutdown).

**important note:** If the optional timer is not connected to the controller, the set timer mode settings will not effect anything.

To enter the set timer mode you must first open the vendors main door, then while holding in the door switch, press the controllers mode button five times and the display will show "st" (fig. 3i) for set timer.

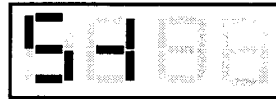


fig. 3i

At this time you will be able to view / set the timer setting for each individual selection. First you must choose the selection in which you wish to view or change. To view the current timer setting for that selection you must press and release the select button (the display will show "on" or "off"). To change the current setting you must press and hold in on the select button and the current timer setting will change. Each selection must be set individually.

**Vendor Options Mode :** Since each controller may be used in a variety of different size vendors (with like revision compatibility only), it is necessary to program the control board according to the size of the vendor that it is in so that it will operate properly. This is done in the vendors options mode by programming the number of wide columns and the total number of columns in the vendor. The options mode is also used to program other features.

To enter the set options mode you must first open the vendors main door, then while holding in the door switch, press the controllers mode button six times and the display will show "opt" (fig. 3j) for options.



fig. 3j

**important note:** For vendors with one less select button than the number of columns ignore the settings for the #2 selection.

selection to be set	function
1	# of wide columns in vendor
2	on = forced purchase / Off = escrow
3	total # of columns in vendor
4	on = bill validator escrow ( <b>warning:</b> only turn on if DBV is capable of escrow)
5	on = sequence of vending from columns 1 & 2 from selection #1

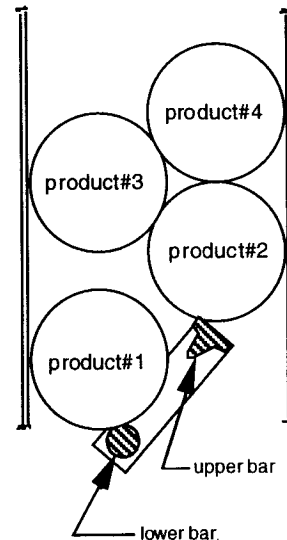
### LOADING INSTRUCTIONS & CLEARING JAMMED PRODUCT

Listed in this section are loading instructions for 12oz. cans and 10oz. P.L.B.s (Plastic Label Bottles) for loading in both wide and narrow columns. Due to Merlin's "positive vend" delivery system no priming (loading to avoid a dry vend) is necessary but it is recommended to test vend after loading, especially if the column was completely empty of cans (prior to loading). This will help to eliminate the possibility of a jam in the lower mechanism from a loading error.

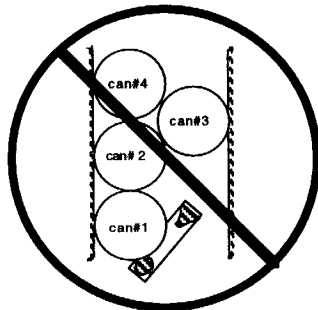
**WIDE COLUMN LOADING** - To avoid jams, a wide column should be loaded alternatively as seen here (shown on right). If the column is entirely empty of product, attempt to load a row of product on the lower bar of the oscillator to increase column capacity. To decrease the possibility of a jam, make sure all product is lying flat and not standing upright in the column.

12oz. (conventional) cans should be loaded with either the top or the bottom of the can to the rear of the vendor.

10oz. P.L.B. bottles should be loaded with the top (cap) of the bottle to the rear of the vendor. In the instance that you are vending double depth you should load both the front and rear bottles with the caps to the rear of the vendor.



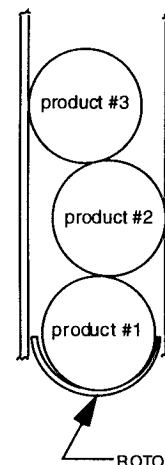
DO NOT load a wide column as seen here. In this instance, as product #1 vends, it is possible that the upper bar of the oscillator (moving from the right of the column to the left) could jam product #2 against the column wall. This could also happen on the other side of the column.



**NARROW COLUMN LOADING** - If the column is entirely empty of product, rotate the rotor to a cup position before loading. This will maximize product capacity in the column.

12oz. (conventional) cans should be loaded either can top or can bottom to the rear of the vendor.

10oz. P.L.B. bottles should be loaded with the top (cap) to the rear of the vendor. In the instance that you are vending double depth you should load both the front and rear bottles with the caps to the rear of the vendor (shown on left).



**CLEARING JAMMED PRODUCT** - For most cases, clearing a jam is relatively simple. Unlike other types vendors, the Merlin 2000 has a time-out period (voltage from control board to motor) which lasts between 8 and 10 seconds prior to going sold out (voltage is killed to motor) after the chosen selection. Because of this feature, the motor does not cycle on overload, thus should not have power to it after the given time-out period.

To ease the pressure from the vend motor on the jammed product just simply press on the brass colored brake on the top of the vend motors coil. If the column is fully loaded it may be possible to get to the jammed product from below the vending mechanism (oscillator or rotor). If so, then try to free it while holding the vend motors brake down. If all seems to fail it may be necessary to unload the column and release the jammed product from above the vending mechanism (oscillator or rotor).

**BACKSPACERS** - Listed below are the factory standard backspacer settings for double and triple depth vending of 12oz. cans and 10oz. P.L.B.s . Backspacer adjustments for other size packages may be different, please contact your local Royal Vendors representative for more information.

package	vendor size (depth)	capable vending depth	backspacer position (from front set of holes)
12oz. can	2	2	8
10oz. P.L.B.	2	2	12
12oz. can	3	3	18
10oz. P.L.B.	3	2	13

### **TESTING THE VENDOR**

Upon receiving the vendor, before placing it location, it is suggested that the vendor be visually inspected, that any additional ID. numbers (tags, etc.) be placed on the vendor at this time, that a vend price be set for each individual selection and that each column be vend tested with a variety of different coins and bills to not only ensure that the vendor will deliver product properly, but to also ensure that the vendor will accept and payback properly.

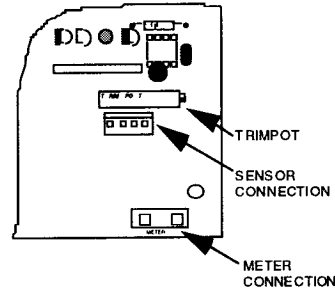


## READING THE CAN / CASH COUNTERS

The following section outlines the counters that are available or optional with the Merlin 2000 electronic vendors.

### Version 1 controllers

The version 1 controller offers an optional 24 volt "mechanical counter" which counts increasingly in 5¢ increments. The counter mounts in the changer plug bracket located directly above the vendors coin mechanism (changer). Its harness extends upward and plugs onto the lower right corner of the vendors control board (as shown on right).

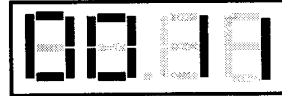


### Version 2 and revision 5.00 to 5.06 controllers

All version 2 controllers and version 5 controllers of the revision level 5.00 to 5.06 are equipped with built-in, digital can and cash counters which are shown on the L.E.D. display. Both types of counters are historical (non resettable).

**CASH COUNT:** Upon opening the vendors main door the display will flash your cash count using two sets of four digits:

If the total cash taken in was \$1185.15 the first display would show thousands and hundreds.

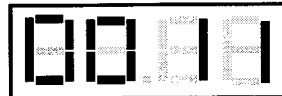


If the total cash taken in was \$1185.15 the display would then show thousands and hundreds.



**CAN COUNT:** By pressing select button #3 at this time (select button #2 on vendors with one less select button than the number of columns). The display will flash the total units sold through the vendor. Like the cash count, it uses two sets of four digits:

If the vendors total unit sales (can count) is 118515 the first display would show thousands and hundreds.



If the vendors total unit sales (can count) is 118515 the display would then show thousands and hundreds.



### Revision 5.07 and higher controllers

**CAN COUNT:** All control boards of revision 5.07 and higher will immediately flash the vendor total unit sales (non resettable ) on the display upon opening the vendors main door in the same manner as listed above.

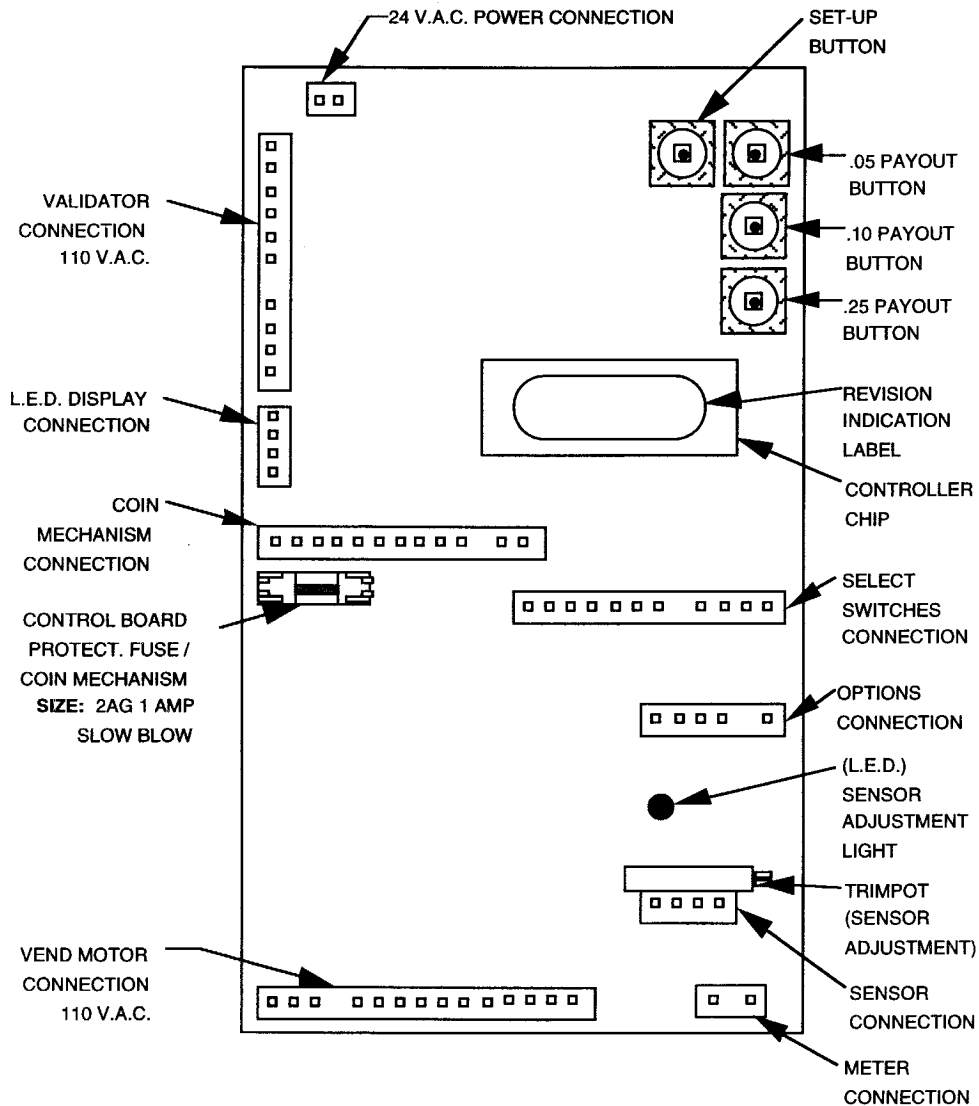
**INDIVIDUAL CAN COUNT:** At this point you are able to access individual can counts (resettable) per selection by pressing the selection in which a count is desired. The individual counts can (all selections) be reset by pressing the #1 and the #4 select buttons simultaneously.

**CASH COUNT:** The total cash count (non resettable) can be read after opening the vendors main door by pressing the #1 and the #3 buttons simultaneously. It will appear as the cash count shown above.

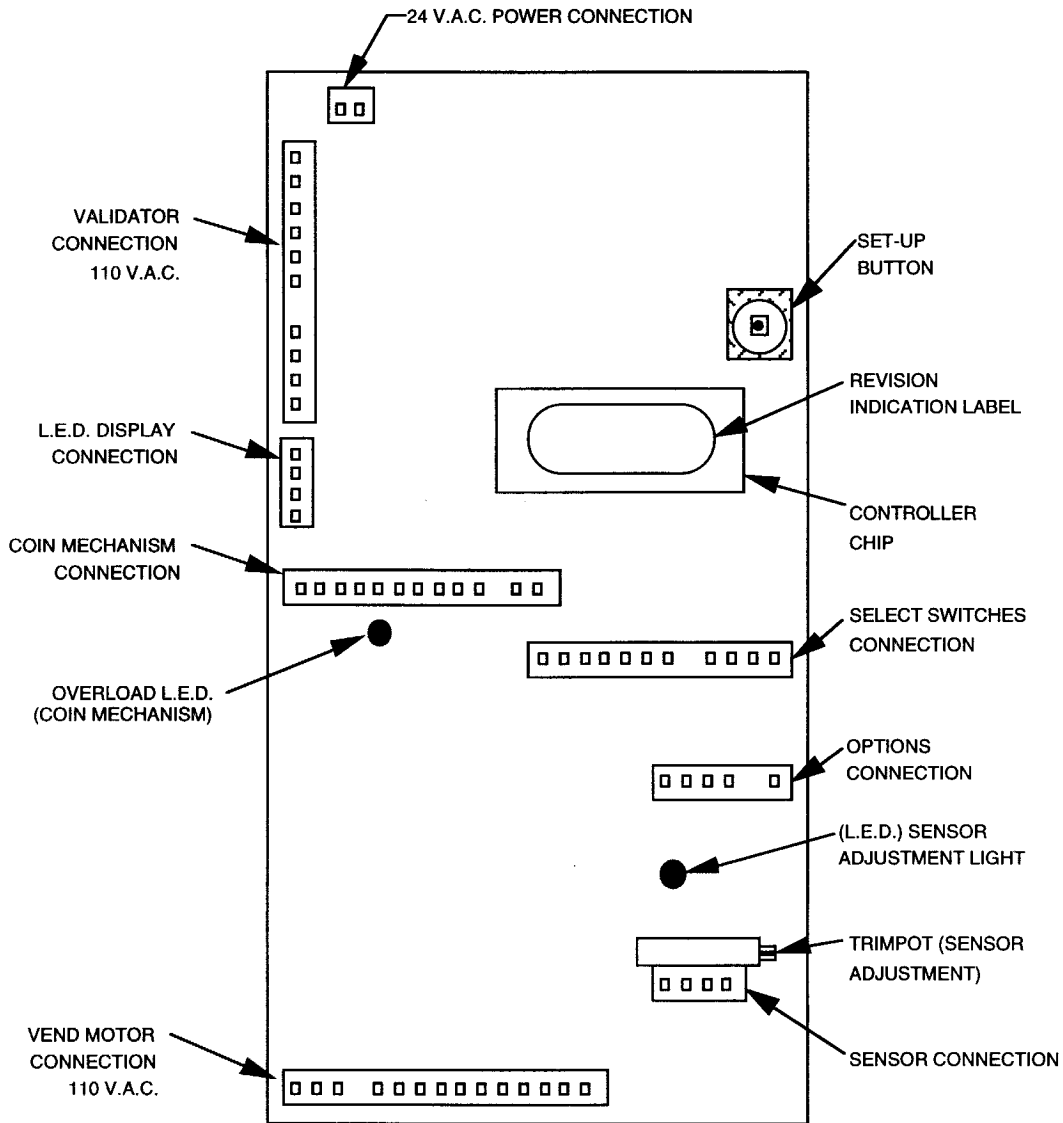
## **SECTION 4: POINTS OF INTEREST**

### ***CONTROL BOARD PINOUTS***

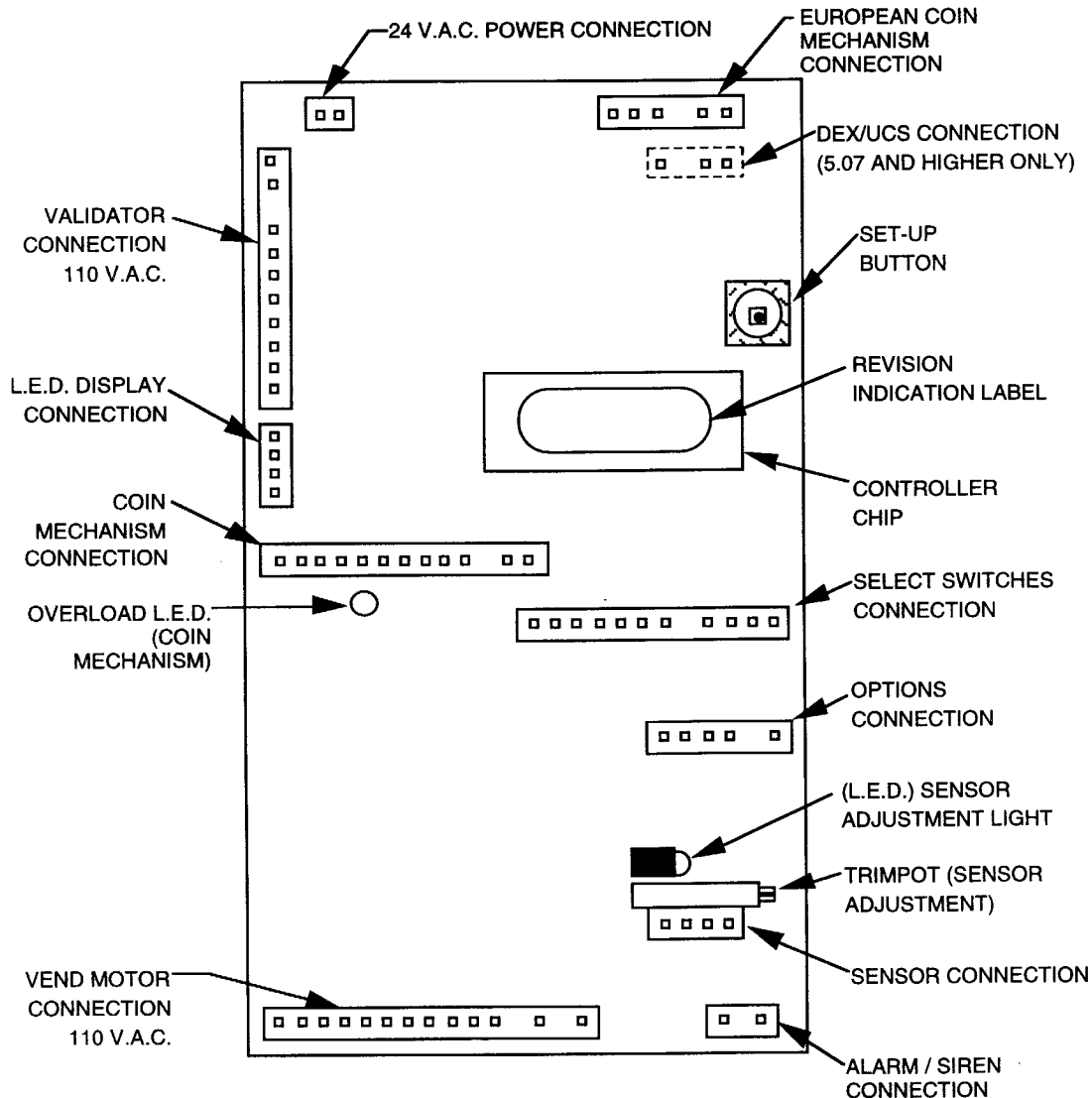
This section will illustrate the pinout connections for version 1, 2 and 5 controllers. for more information concerning controller pinouts please contact your nearest Royal Vendors representative.

**ALL VERSION 1 CONTROLLERS****notes:**

1. **CAUTION:** Both the validator and the vend motors connections are 110 volts, extreme caution should be used when plugging or unplugging harnessing from either connection. Reconfiguring existing harnessing, including switching the keyed position may cause controller damage and bodily harm.
2. **CAUTION:** Be sure that the changer and all other connections are properly plugged in before applying power to the vendor
3. **CAUTION:** Never plug or unplug connections with power applied controller damage and bodily harm may result.

**ALL VERSION 2 CONTROLLERS****notes:**

- 1. CAUTION:** Both the validator and the vend motors connections are 110 volts, extreme caution should be used when plugging or unplugging harnessing from either connection. Reconfiguring existing harnessing, including switching the keyed position may cause controller damage and bodily harm.
- 2. CAUTION:** Be sure that the changer and all other connections are properly plugged in before applying power to the vendor
- 3. CAUTION:** Never plug or unplug connections with power applied controller damage and bodily harm may result.

**ALL VERSION 5 CONTROLLERS****notes:**

1. **CAUTION:** Both the validator and the vend motors connections are 110 volts, extreme caution should be used when plugging or unplugging harnessing from either connection. Reconfiguring existing harnessing, including switching the keyed position may cause controller damage and bodily harm.

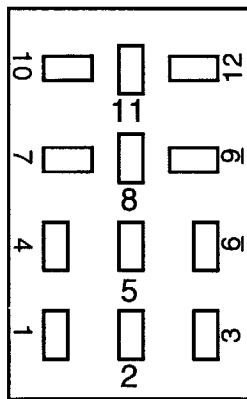
2. **CAUTION:** Be sure that the changer and all other connections are properly plugged in before applying power to the vendor

3. **CAUTION:** Never plug or unplug connections with power applied controller damage and bodily harm may result.

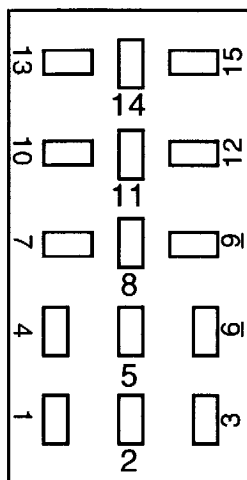
**COIN MECHANISM RECEPTACLE**

The coin mechanism sends and receives information via the changer harness between the coin mechanism and the vendors controller. There are two types of coin mechanism receptacles (at the end of the changer harness), a 12 way receptacle and a 15 way receptacle. The wire numbers of the vendors changer harness should coincide with the pin numbers listed below.

changer usage: If your vendor has a 12 way receptacle, you must use a 12 pin coin changer see section 2, coin mechanism for models. If your vendor has a 15 way receptacle you may use either a 12 way or 15 way coin changer. (contact coin changer manufacturer for more information)

**12 WAY COIN MECHANISM RECEPTACLE**

PIN #	FUNCTION
1	5VDC supply positive
2	5VDC supply return
3	Send (0-volts active)
4	Interrupt (0-volts active)
5	Data (0-volts active)
6	Accept Enable (0-volts active)
7	\$.25 dispense (0-volts active)
8	\$.10 dispense (0-volts active)
9	\$.05 dispense (0-volts active)
10	117/24 VDC supply return
11	Reset (+5 VDC active)
12	117/24 VDC supply positive (rectified unfiltered)

**15 WAY COIN MECHANISM RECEPTACLE**

PIN #	FUNCTION
1	5VDC supply positive
2	5VDC supply return
3	Send (0-volts active)
4	Interrupt (0-volts active)
5	Data (0-volts active)
6	Accept Enable (0-volts active)
7	\$.25 dispense (0-volts active)
8	\$.10 dispense (0-volts active)
9	\$.05 dispense (0-volts active)
10	117/24 VDC supply return
11	Reset (+5 VDC active)
12	117/24 VDC supply positive (rectified unfiltered)
13	117/24 VDC supply return
14	\$1.00 coin dispense
15	117/24 VDC supply positive (rectified unfiltered)

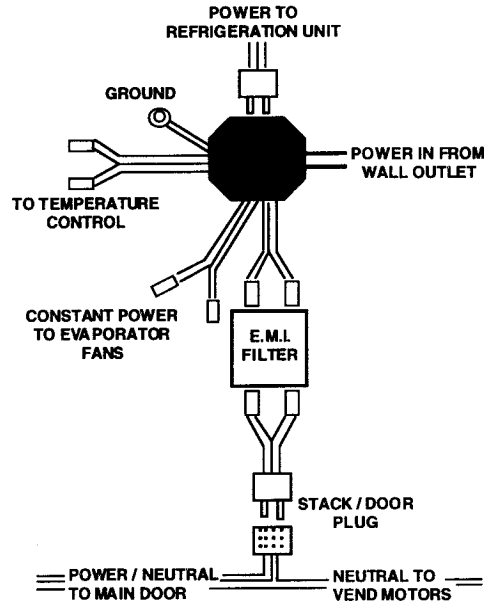
**MAIN WIRING HARNESS**

The vendor receives power into the main wiring harness from the wall outlet. The main wiring harness distributes constant power to the evaporator fan and to the E.M.I. filter (then to the stack / door plug to power / neutral the vendors main door and to provide neutral to the cabinet / vend motors)

The main wiring harness sends 110 volts to the temperature control (through the smooth wire). According to the predetermined temperature, it will close its contacts sending 110 volts back to the main wiring harness through the ribbed wire. This voltage is used for the outlet on top of the main wiring harness to power the refrigeration unit. Neutral is constant to the outlet.

note: Smooth wire = 110 volts

Ribbed wire = neutral



**VEND MOTORS CIRCUIT**

The vend motors circuit starts as power enters the stack / door plug at the bottom of the vendors main door from the main wiring harness, from this point:

- In some models neutral travels into the vendors cabinet and is applied to each vend motors through jumper wires (fig. 4a).

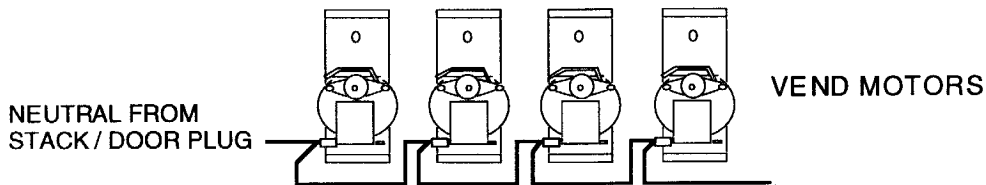


fig. 4a

In some models the neutral must first travel through a single sold-out switch (per column) before reaching each vend motor (fig. 4b); the sole purpose of each switch is to ensure that a certain level of product is held in “pre-cool”.

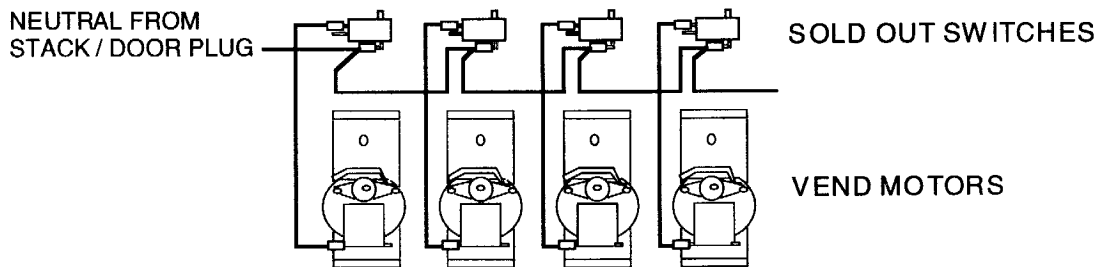


fig. 4b

- Power (110 volts) and neutral travel from the vendors stack / door plug to a connector at the bottom of the vendors main door. At this point, the 110 volt “hot” wire is identified as wire number 17 and the neutral wire is identified as wire 18.

From this connector, wires 17 and 18 travel upward into the vendors main door to carry power to various connections (fig. 4c). The first stop for power is the ballasts 2-way “mate-n-lok” power connection (lighting). On older style vendors this connection may be later in the circuit. Power is then taken to the transformer assembly (to power the controller). From here power travels to the 2-way “mate-n-lok” connection (and the ballast connection on older style vendors) both are identical and both serve the same purposes as 110 volt power outlets.

note: on older style vendors the connections and wire numbers may vary.

From the 2-way “mate-n-lok” validator connection, wires 36 (110v.) and 38 (neutral) carry power to the lower left connection of the vendors controller, with a in-line fuse box installed on wire 36.

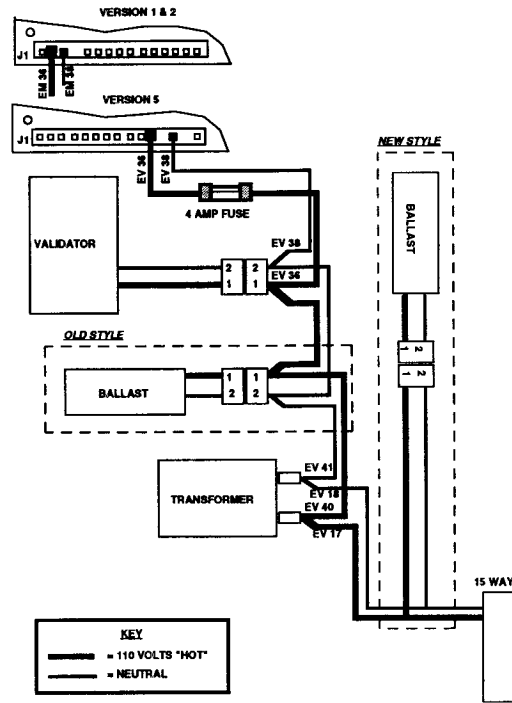


fig. 4c

note: For a vend to take place, it is necessary that wire 36 constantly have 110 volts and that it be in the proper location on the vendors controller.

The controller, upon selection will take the power provided by wire 36 and transfer it through one of the individual vend motor wires to power the motor for that selection (fig.4d)

**notes:**

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## SECTION 5: VEND CYCLE

### VEND SEQUENCE

In a "stand-by" condition the vendor will show the vend price on the L.E.D. display if set for a single price, or ".00" if set for multi pricing. If a selection button is pressed prior to reaching the vend price (establishing a credit) the display will show the vend price for that selection. This will indicate to the customer that more money is needed for that particular selection.

As coins are inserted into the coin mechanism, a corresponding credit count will appear on the display. The coin mechanism will continue to accept coins until the highest vend price has been achieved; all coins in excess of the vend price will be returned to the coin cup. Once the vend price has been achieved, the control board will then set up a credit, enabling a vend to be made for any selection which is equal to or less than the established credit.

The vendors control board constantly sends a low voltage signal to the common position of each select switch. When a selection is made, the selection switch closes, allowing the low voltage signal to travel from the switches common position through the switch and out the normally open position of that switch to the control board. At this time, (if there has not been a previous sold out) the control board distributes 110 volts through the door and cabinet wiring harnesses and directly to the coil of the chosen vend motor. Simultaneously "hold" will appear on the display; this is a indication to the customer that a vend is in progress and to please wait. As the vend motor receives power, it will cycle the oscillator or rotor in attempt to vend a can. At this point one of two things will take place:

1. The column selected will register "sold-out" (see "sold out" this section)

OR

2. The control board will continue to send 110 volts As the vend motor cycles it will turn the oscillator or rotor to dispense product.

note: Some models have "sold out paddles" on each column. For the vend motor to operate, the sold out paddle for the attempted column must be pressed down.

As the can or bottle drops onto the product delivery chute the vibration from the impact will allow the delivery sensor to send a low voltage signal to the vendors control board indicating that a product has been vended.

After the control board receives the sensors signal, it will take into account how the vendor is programmed (set depth and the options) and it will act accordingly.

1. If the front can (either front or middle can in a triple deep vendor) has just vended, the control board will kill all power to the vend motor at the exact same time which an impact is registered (to avoid a multiple vend of the next product to the rear of the cabinet)

OR

2. If the rear can has just vended, the control board will cycle the vend motor to pick up another load of product to allow a quick vend (less than 2 seconds) for the next customer.

note: The controller will go through a learning process known as the "learning mode" it will occur either on power down/up or a door opening/closing; It is what allows the vendors controller to decide which is the front (middle in triple deep) or rear product. The learning mode acts in conjunction with the depth setting to allow for a automatic reload after the rear can has vended.

How it works: The controller will notice the first "long-timed out" vend cycle (during the learning process) and from this, the controller will know that the very next vend will be the front product.

**SOLD-OUT**

Upon selection the display will read "Hold". After 10 -12 seconds, if a drop of product is not detected the display will show "sold-out". A sold out may be due to:

- The column attempted is jammed, therefore product does not drop.
- The column attempted is genuinely sold out (empty) of product
- The sensor is out of adjustment and does not detect the product drop (see section 3: vendor set-up)

The digital display will indicate "sold out" and flash the sold out lamp, signaling to the customer to make another selection, or push the coin return lever for a full refund (if set for escrow to vend). If set for forced purchase the customer must make a selection.

. If the vendor is totally sold out of product, illumination of the "sold out" lamp and the "sold out" message on the digital display will be continuous. No money will be accepted into the vendor in a total sold out condition.

A sold-out condition is only cleared by the vendors door switch through opening and closing the vendors main door.

If a sold out condition is not cleared, the controller will not attempt to vend from that selection (the display will not show "Hold") and it will automatically show "sold-out" upon pressing the select button (either before or after reaching a vend price).

note: In some models when a column is in the sold out condition, sold out paddles enable the vendor to keep two or more (depending on the load) in the pre-cool position in double depth vendors, while keeping three or more cans in the pre-cool position in triple depth cabinets.

**notes:**

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## SECTION 6: VENDOR MAINTENANCE

### WHAT TO CLEAN

A routine cleaning schedule is the best way to insure the best possible operation and appearance from your "Merlin" vendor.

Control board: The vendors control board should always be enclosed inside of its cover to help protect it. Routine cleaning is not necessary but if desired the controllers area may be blown out with compressed air.

*Never* use petroleum cleaners and *Never* submerge electronics in water. If the controller is accidentally sprayed with water, be sure to allow it to dry thoroughly before powering the vendor up.

Condenser and Evaporator Coils: For efficient operation, the condenser and evaporator coils must be kept clear of any dirt or foreign materials. Clean dirt and lint from the condenser and evaporator coils with a brush, vacuum cleaner or compressed air.

Cabinet and Mechanism: Steam clean as required. *Never* use petroleum cleaners and *Never* submerge electronics in water..

### WHAT TO LUBRICATE

Latch Strike Nut: The latch strike nut should be lubricated from time to time with a petroleum base grease.

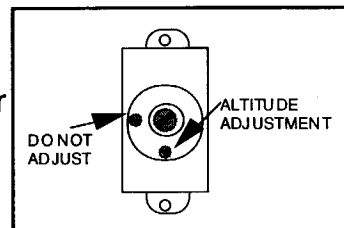
Inner Door Gasket: The door gasket comes from the factory pre-lubricated but should be lubricated from time to time with a silicone base grease. Apply to the vertical piece of gasket on the hinged side of the inner door that touches the vendors main door. This will help prevent any "peel back" of the gasket which could possibly cause air leaks into the sealed cabinet resulting in freeze ups

Refrigeration System: The refrigeration system is a sealed unit and does not require any lubrication. The condenser and evaporator motors do not require any lubrication.

### WHAT TO ADJUST

Temperature Control: The temperature control has been preset at the factory to maintain the specified temperature of the product. If you wish to change this setting, turn the control screw clockwise to make the product colder and counter-clockwise to make it warmer. When making an adjustment, turn the control in increments of 1/8 of a turn in the required direction. Wait at least two hours and check the product temperature again before making further adjustments.

Altitude Adjustment: 1/8 of a turn clockwise for every additional 2000 feet. An improperly set altitude adjustment could result in excess frost on the evaporator coils.



### **Safety Note:**

*To prevent bodily injury or damaging the electronics never plug or unplug any electrical connectors with power applied.*

## MERLIN 2000 TROUBLESHOOTING GUIDE

<u>TROUBLE</u>	<u>POSSIBLE CAUSE</u>	<u>PROCEDURE</u>	<u>REMEDY</u>
No coin acceptance	No power to controller (display is dead)	Check power connection at controller (24VA)	If no power, check/replace transformer  If power exists, replace controller
	Short in changer circuit: <ul style="list-style-type: none"> <li>• coin mechanism</li> <li>• changer harness</li> <li>• control board</li> </ul>	<p><i>If version 1:</i> Check control board changer protection fuse with meter... Replace if bad. Visually check changer and changer harness for shorts...</p> <p><i>If version 2 &amp; 5:</i> Controller overload light on Visually check changer and changer harness for shorts... Unplug vendor for 5-10 min. to reset overload...</p>	<p>Unplug changer harness from board and power up, if l.e.d. re-lights, board is bad. Power down, plug harness on, power up and vend... If l.e.d. lights again, coin mech is bad</p> <p>Unplug changer harness from board and power up, If fuse blows, board is bad. Power down, plug harness on, power up and vend... If fuse blows again, coin mech is bad</p>
	Coin mechanism harness to board is cut or disconnected	Check each harness wire to make sure it is not cut /disconnected. (see page 30) Wire numbers should match numbers molded on receptacle	repair or replace changer harness
		If still no coin acceptance	Replace coin mechanism
	If still no coin acceptance	Replace vendors control board	

<b>TROUBLE</b>	<b>POSSIBLE CAUSE</b>	<b>PROCEDURE</b>	<b>REMEDY</b>
No acceptance or rejects a percentage of good coins	Coin return lever	Make sure changer is mounted correctly & coin return lever is in proper position	Reposition changer and or vendor coin return lever.
	Acceptor is dirty or foreign matter in path	check acceptor path to be clean	clean acceptor
	coin changer improperly tuned (if tunable)	Consult coin changer manual/ representative or replace changer	Consult coin changer manual/ representative or replace changer
Accepts coins but gives erratic / no credit	Defective controller (no acceptance only)	Replace control board and test	Replace faulty control board
	<i>If erratic or no credit:</i> acceptor (coin mech)	Replace coin mech. (acceptor) and test. if ok	Replace acceptor or coin mechanism
	<i>If no credit:</i> Defective harness between coin mechanism and control board	Check harness for cut wires or wrong connections. If defective	Repair or replace harness
Changer will not payout coins	<i>If no credit:</i> Defective controller	Replace control board and test	Replace faulty control board
	Defective harness between coin mechanism and control board... Pins 3,4 & 5 cut or not connected	Check harness for cuts or wrong connections (see page 30 coin mechanism receptacle)... If defective	Repair or replace harness
	Defective coin mechanism	Replace coin mechanism and test. If it pays out.	Replace faulty coin mechanism

<b><u>TROUBLE</u></b>	<b><u>POSSIBLE CAUSE</u></b>	<b><u>PROCEDURE</u></b>	<b><u>REMEDY</u></b>
	Defective controller	Test vendors manual coin payout... If vendor pays out manually by not during sales...	replace defective control board
Validator will not pull in a bill	No power to validator (validator status light is off )	Make sure that the validator harnessing is correct for your style of validator and it is plugged in properly.	Correct faulty harnessing. Power vendor down/up and listen for validator to cycle... If validator cycles, power is present.
	Acceptance disabled by coin mechanism or bad harnessing (validator status light is on)	Make sure that the coin mechanism is plugged in (accepts coins) and that the tubes are full of coins.	If not, fill coin tubes.
		Make sure that the changer harnessing is correctly connected (see page 30 "coin mechanism receptacle) and not cut or pinched. if so	Repair or replace faulty harnessing
		Replace coin mechanism and test. If validator accepts...	replace defective coin mechanism
	Defective validator	Replace validator and test. If validator accepts...	Replace defective validator
	Defective controller	Replace controller and test. If validator accepts...	Replace defective controller

<b><u>TROUBLE</u></b>	<b><u>POSSIBLE CAUSE</u></b>	<b><u>PROCEDURE</u></b>	<b><u>REMEDY</u></b>
Validator takes a bill and not establishing a credit	Defective (wrong, cut or miswired) validator harnessing. (Credit not getting from validator to control board via the credit wire)	Make sure that the validator harnessing is correct for your style of validator and it is plugged in / wired properly.	correct faulty harnessing
	Defective validator	Replace validator and test. If validator accepts...	Replace defective validator
	Defective controller	Replace controller and test. If validator accepts...	Replace defective controller
Validator takes a bill and not erasing credit	Validator switch settings (if any)	Refer to validator service manual or validator representative	-----
	Wrong validator interface harness to vendors controller	Refer to validator service manual or validator representative	-----
	Defective validator	Replace validator and test. If validator accepts...	Replace defective validator
	Defective controller	Replace controller and test. If validator accepts...	Replace defective controller
Validator takes a bill and allows payback of coins without a selection	Controllers options settings not correct.	Access the vendors options mode and check the option settings (refer to section 3 "vendor setup")	change options if incorrectly set, then test.

<b><u>TROUBLE</u></b>	<b><u>POSSIBLE CAUSE</u></b>	<b><u>PROCEDURE</u></b>	<b><u>REMEDY</u></b>
Vendor sets up credit with bill and erases credit upon selection.	controllers options not set correctly (revisions 5.07 and higher)	Access the vendors options mode and check the option setting for dollar escrow (refer to section 3 "vendor setup")	change options if incorrectly set, then test.
Multiple vending	<i>Version 2 &amp; 5 only:</i> Controllers column depth setting per column is wrong	Access the vendors set depth mode and check the current depth setting. If wrong.	Correct setting
	Controllers option setting is wrong	Access the vendors options mode and check the current option #1 select button setting. If wrong.	Correct setting
	Delivery sensor	check to see if the delivery sensor is plugged onto the controller. If not	Plug sensor harness onto proper connection at the controller and properly grounded.
		Check to ensure that the sensor is adjusted properly (refer to sect. 3 vendor setup). Test by hitting delivery chute to watch the sensor adjustment blink on then off.	Adjust sensor properly if necessary
		replace delivery sensor and test. If it vends correctly	Replace defective sensor
	Vend motor	Check to see if the vend motors brake is not bent and that it is releasing after a vend cycle. If not	lubricate vend motor brake with silicone spray



<b><u>TROUBLE</u></b>	<b><u>POSSIBLE CAUSE</u></b>	<b><u>PROCEDURE</u></b>	<b><u>REMEDY</u></b>
	Vend mechanism (Oscillator & Rotor)	Make sure that the oscillator (wide column) and rotor (narr. column) are properly in place and that they are not bent in the slightest. If so	Check vend motors brake pawl spring... If bad, replace motor  Replace defective part(s)
	Shimming if necessary (or required in triple deep cabinets)	Make sure that the proper shimming is installed for your type of vendor according to the product that you are vending.	Install proper shimming if necessary
Multi-vend or double vend every other attempt	Vendor selection depth set incorrectly (set for less than actual depth)	Access controllers set depth mode and check all selections. If incorrect...	Correct depth setting
	Vendor options set incorrectly (number of wide columns)	Access controllers options mode and check the options (especially option For selection #1)	Correct depth setting
	Delivery sensor	Check to see if the delivery sensor adjustment led blinks upon product impacting the chute. If not...	Turn sensor adjustment screw 1/4 turn clockwise and test vend. If still not working, refer to section 3 "vendor setup" for the proper sensor setting for your version controller.

<b><u>TROUBLE</u></b>	<b><u>POSSIBLE CAUSE</u></b>	<b><u>PROCEDURE</u></b>	<b><u>REMEDY</u></b>
Wrong product vending from selection #1 every second vend	Vendor options set incorrectly (sequencing)	Access controllers options mode and check the sequencing option (Refer to section 3 "vendor setup" for options settings)	Correct options settings
Multiple vends without a selection	Reversed polarity with a wire shorted to ground between the control board and the vend motor	During standby. If 110 volts is read on the neutral side of the vend motors. (jumper or sold out switches side)	Check the voltage from the wall outlet if it is reversed, try to find the shorted wire from the select switch to the vend motor.
	Defective control board	During standby. If 110 volts is read at any motor from the board. (Check every vend motor)	Replace controller and any shorted vend motors. If a shorted motor is missed there will be a change of a reoccurrence
First vend after reload is slower than 3 seconds	Vendor selection Depth set incorrectly (set for greater than actual depth)	Access controllers set depth mode and check all selections. If incorrect...	Correct depth setting
No vend upon selection - Dry vend (no refund)	Delivery sensor	Check to see if the delivery sensor adjustment led is constantly on, If so.	Turn the adjustment screw counter clockwise until adjustment led goes out. Follow the setting instructions in section 3 "vendor setup" for your version of board
		Check to see if the delivery sensor harness is cut or pinched. (The sensor adjustment led will constantly be on.). If a cut is found.	Replace defective sensor

<b><u>TROUBLE</u></b>	<b><u>POSSIBLE CAUSE</u></b>	<b><u>PROCEDURE</u></b>	<b><u>REMEDY</u></b>
		Unplug the sensors connection from the control board. If the adjustment led stays on	Replace defective controller
No vend from some but not all columns (allows refund or 2nd choice)	Selection switch	Make sure that the L.E.D. display acknowledges the selection switch pressed by displaying "hold" or by showing "sold out" If not...	Check the select switch... And trace the selections harness back to the control board... replace if necessary
	Individual wire that runs from the motor connection of the control board to the vend motor of the defective column	Check individual wire running from motor connection at board to defective column. If cut or pinched	Repair or reposition the wire if necessary.
	Neutral wire jumpering from left to right (inside cabinet) to each vend motor is cut or pinched	If this wire is cut or pinched all vend motors to the right of the problem will not run	Find and repair the cut / pinched wire
	Control board	Measure voltage at motors connect. on the individual wire per attempted motor. A selection must be made and "hold" must be displayed on the L.E.D. You should register 110 VAC	If no or insufficient voltage is registered change defective control board.
No vend from any selection (allows refund or 2nd choice)	Vend motors fuse blown by shorted control board.	Unplug vend motors connect. from control board. Replace fuse and power up, check fuse	If blown, replace control board

<b><u>TROUBLE</u></b>	<b><u>POSSIBLE CAUSE</u></b>	<b><u>PROCEDURE</u></b>	<b><u>REMEDY</u></b>
	Vend motors fuse. blown by shorted harnessing...(after performing the above test)	With motors conn. plugged onto controller unplug leads from each motor. Replace fuse, vend from each column then check fuse. If bad	Repair or replace shorted harnessing between control board and motors
	Vend motors fuse. blown by shorted vend motor(s)...(after performing the above test)	With motors conn. plugged onto controller & leads plugged onto each motor. Replace fuse & vend from each column. If fuse blows	Repair or replace shorted harnessing between control board and motors
	Wire 36 to vend motors connection does not have at least 110 volts AC constantly	Check all wires connected to wire 36 from the control board for cuts... Cut found ?	If so, repair or replace shorted harnessing carrying 110 VAC to control board
	Neutral wire jumpering from left to right (inside cabinet) to each vend motor is cut or pinched	If this wire is cut or pinched all vend motors to the right of the problem will not run	Find and repair the cut / pinched wire
No vend from any selection (allows refund or 2nd choice)	Vend motors fuse blown by shorted control board.	Unplug vend motors connect. from control board. Replace fuse and power up, see if fuse blows.	If so, replace control board
L.E.D. not lit	No power to control board	Check for 24 volts AC at the control boards power connection. If no power.	Check transformer and power to transformer

<b><u>TROUBLE</u></b>	<b><u>POSSIBLE CAUSE</u></b>	<b><u>PROCEDURE</u></b>	<b><u>REMEDY</u></b>
		Press controllers mode button. Does L.E.D. light? Power the vendor down & up. Does L.E.D. light?	If not, check L.E.D. lead
	L.E.D. lead	Check the lead for any sign of being pinched or cut. If so...	replace L.E.D. lead
	L.E.D	Change the L.E.D., Remove all harnessing but L.E.D. lead & power lead from transformer to board. Check the new L.E.D. before mounting. If still bad	replace the control board and test.
Vendor set at a single price & display shows	Vendor options set incorrectly (number of total columns)	Access controllers options mode and check the options (especially for total number of columns) refer to section 3 "vendor setup" for options settings	Correct options setting
Display shows sold out immediately upon pressing select button with column full of product (sold-out not clearing)	Door switch wiring incorrectly connected or cut / pinched	Check For cuts on the (2) door switch wires going from the switch to the control board, Also check for bad connections: • At the door switch • The plug at the bottom of the vendors main door • At the control board connection. Are any found?	If not, Check the door switch

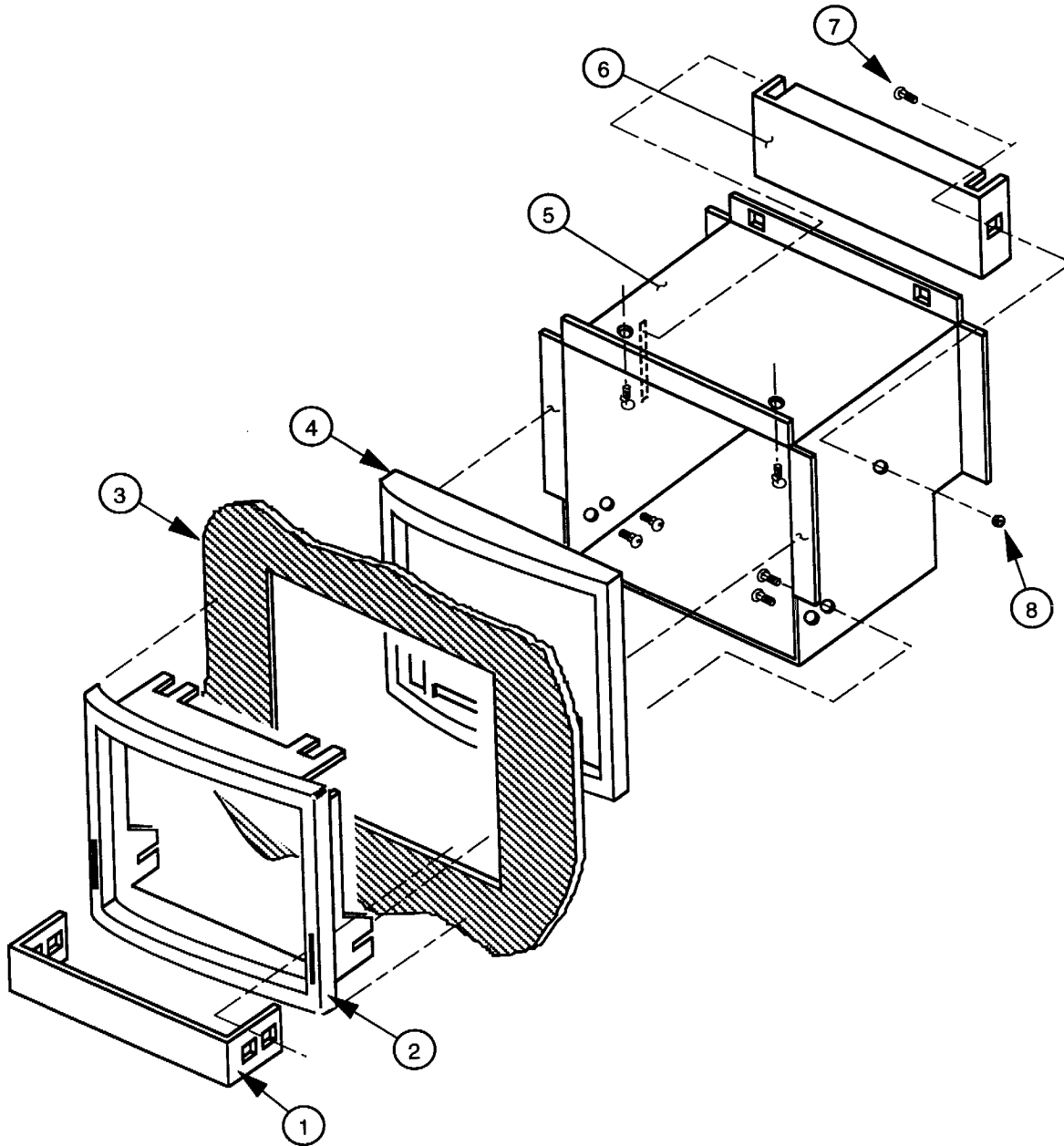
<b><u>TROUBLE</u></b>	<b><u>POSSIBLE CAUSE</u></b>	<b><u>PROCEDURE</u></b>	<b><u>REMEDY</u></b>
	Door switch	Check the door switch to see if it's defective, If so	Replace door switch and test
	Control board	Check control board by shorting across the two pins for the door switch wiring (control boards option connection) Does this clear the sold out condition?	If so, replace control board



## **SECTION 7: EXPLODED VIEWS AND PARTS NUMBERS**



# PORT ASSEMBLY

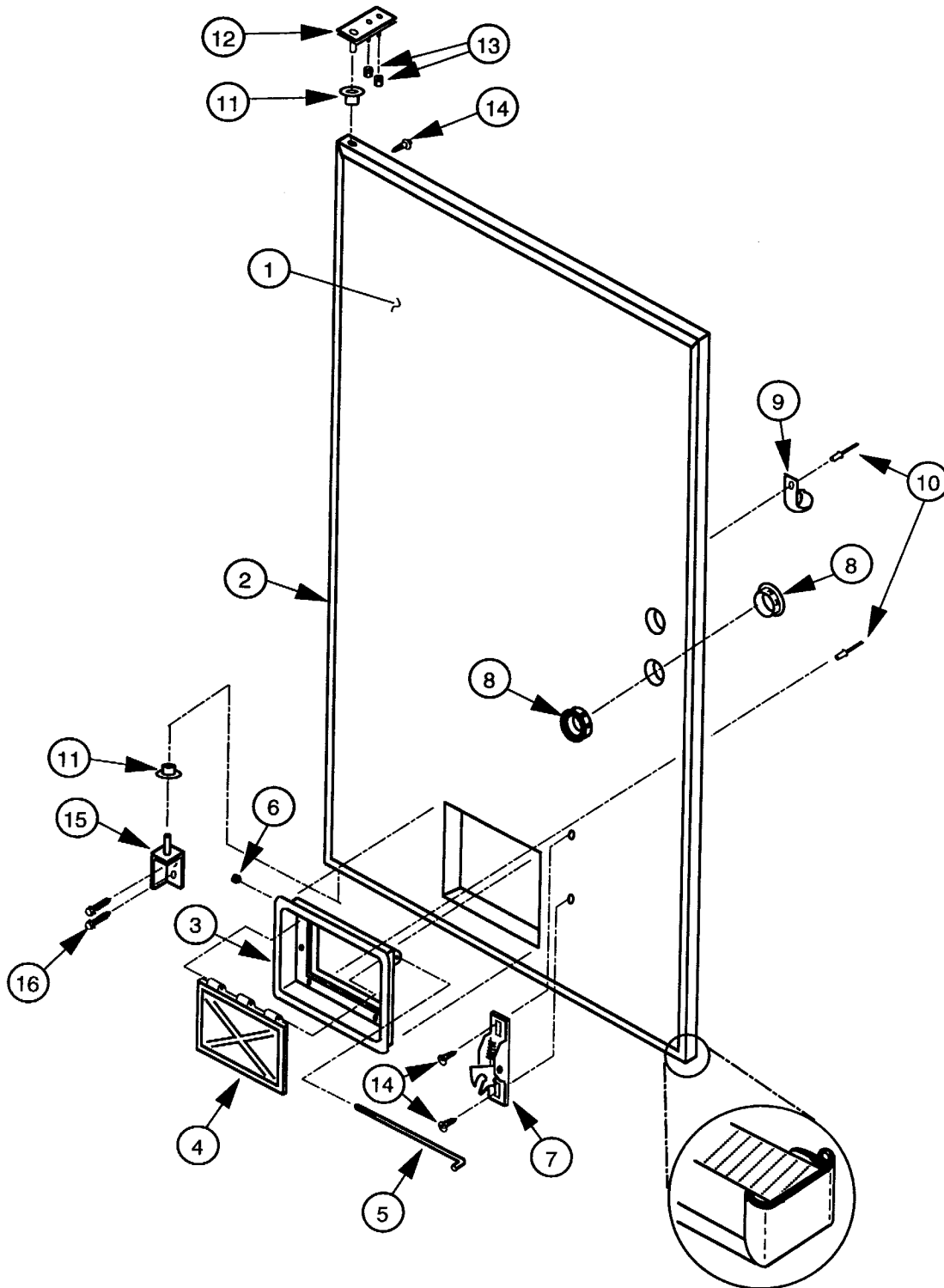


**Port Assembly**

<b>ITEM #</b>	<b>DESCRIPTION</b>	<b>PART NUMBER</b>
1	Can Stop	010,508,003
2	Port Trim	815,019,041
3	Sign	SEE NOTE #1
4	Port Spacer	815,020,031
5	Port Body W/A	010,530,003
6	Anti Theft Plate (all except 16oz & C.D.C. Vend.)	010,509,013
	Anti Theft Plate (Bottles)	141,102,023
7	Bolt 1/4-20x1/2"	901,007,001
8	Nut 1/4-20	905,002,001

NOTE #1: There are various parts, please specify model and serial number at the time of order

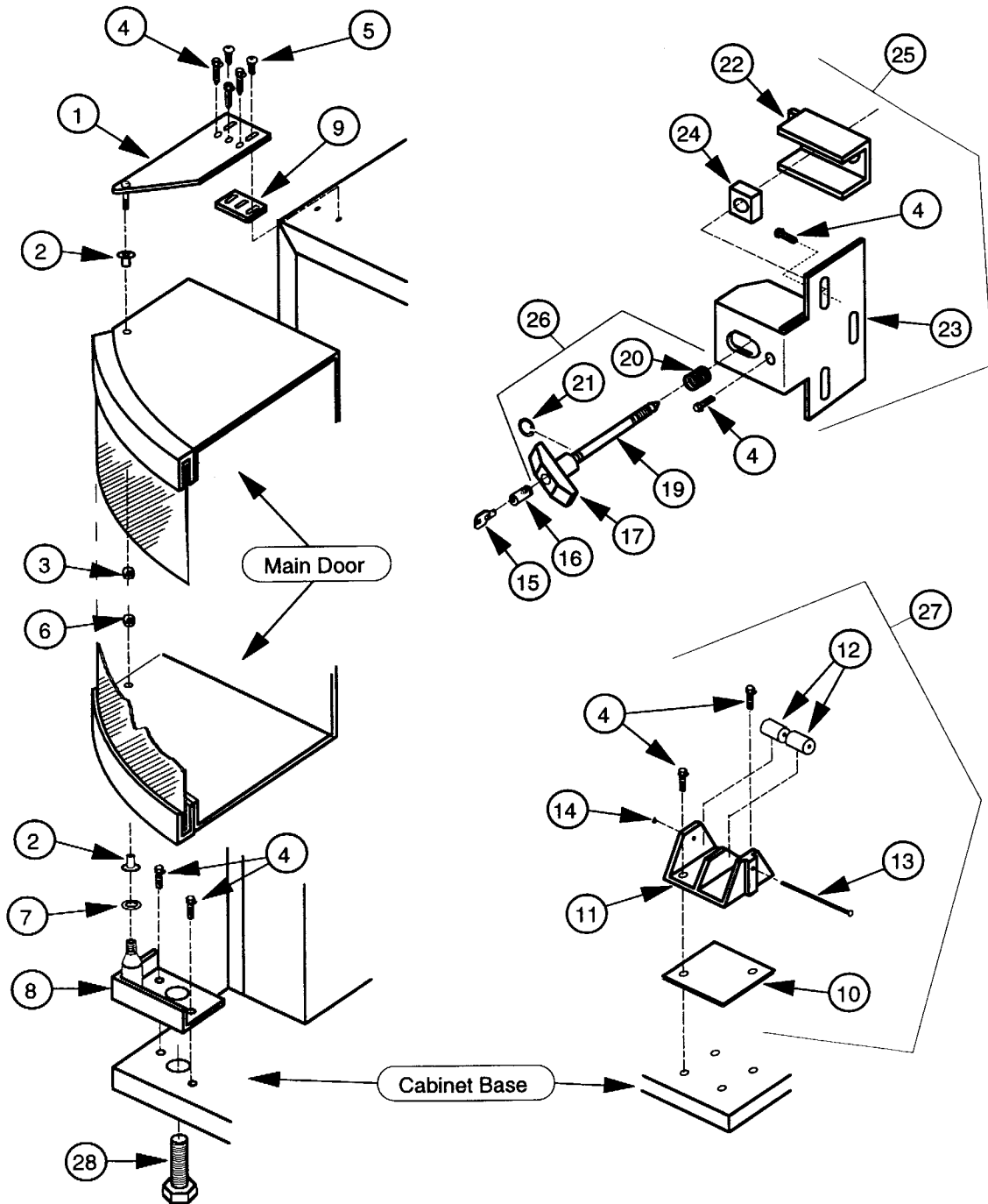
# INNER DOOR ASSEMBLY



**Inner Door Assembly**

<b>ITEM #</b>	<b>DESCRIPTION</b>	<b>PART NUMBER</b>
1	Inner Door Ass'y 72"	011,620,014
	Inner Door Ass'y 79"	010,620,024
2	Inner Door Gasket 72", Wide	815,032,061
	Inner Door Gasket 79"	815,033,061
3	Port Door Frame	815,013,031
4	Port Door	815,014,021
5	Port Door Rod	811,004,011
6	Elastic Stop Nut #6-32	905,006,001
7	Burst Open Latch	812,002,001
8	Bushing, 1.37"	916,003,001
9	Cable Clamp 1"	916,004,001
10	Rivet 3/16" dia.	908,002,011
11	Inner Door Bushing	815,026,001
12	Hinge Assy.- Top Inner Door	010,520,013
13	Nut #8-32	905,001,001
14	Self-drilling Screw #8-18x1/2"	902,004,011
15	Bottom Door Hinge	010,550,014
16	Bolt 1/4-20x1"	901,003,001

# HINGE, LIFTER & T-HANDLE ASSEMBLY



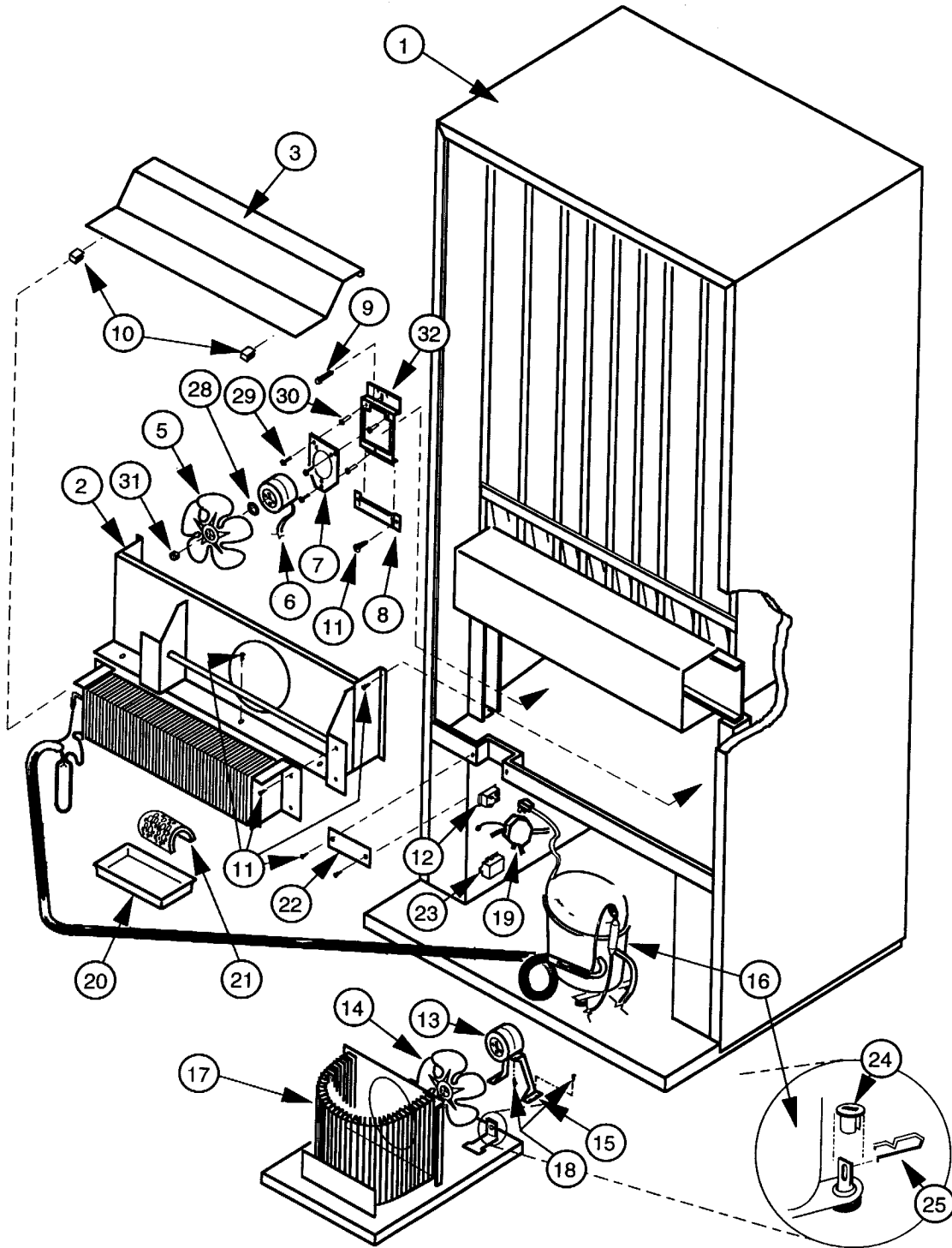
**MAIN DOOR HINGE, LIFTER & T-HANDLE ASSEMBLY**

<b>ITEM #</b>	<b>DESCRIPTION</b>	<b>PART NUMBER</b>
1	Top Hinge Assembly	810,002,021
2	Bearing Nyliner 1/2	916,012,001
3	Nut 5/8"	905,007,011
4	Self Tapping Bolt 1/4-20x1"	901,003,001
5	Carriage Bolt 1/4-20x1"	901,008,001
6	Nut 1/4-20	905,002,001
7	Flat Washer 7/8 O.D.	904,002,001
8	Bottom Hinge Assembly	010,040,023
9	Top Hinge Spacer	010,016,023
10	Door Roller Spacer (As required)	010,015,023
11	Door Roller Bracket	SEE NOTE #2
12	Door Roller	SEE NOTE #2
13	Door Roller Pin	SEE NOTE #2
14	Retaining Ring 5/32"	906,005,001
15	Key	SEE NOTE #1
16	Lock	SEE NOTE #1
17	T-Handle Body (All Except Vandal Resist. Door)	812,134,001
18	Pin, T-Handle	912,133,001
19	T-Handle Stud	803,006,001
20	Spring	SEE NOTE #2
21	Retainer Ring	SEE NOTE #2
22	Nut Retainer	010,028,063
23	Latch Strike	010,027,093
24	Square Nut 3/4x1/2-13	905,005,031
25	Latch Strike Assembly	010,030,004
26	T-Handle Assembly	812,001,011
	T-Handle Assembly (All Vandal Resistant Doors)	812,176,001
27	Door Lifter Assembly	815,030,001
28	Leveling Leg	803,002,041

NOTE #1: There are various parts, please specify model and serial number at the time of order

NOTE #2: This part is not available individually. It must be ordered as an assembly.

# CABINET, REFRIGERATION SYSTEM



## CABINET, REFRIGERATION SYSTEM

ITEM #	DESCRIPTION	PART NUMBER
1	Foamed Cabinet Assembly 72" Wide 2 deep*	011,220,003
	Foamed Cabinet Assembly 72" Wide 3 deep*	059,210,003
	Foamed Cabinet Assembly 79" Wide 2 deep*	010,230,003
2	Evaporator Fan Shroud Assembly	010,013,063
3	Evaporator Cover	010,013,063
6	Grommet-Evaporator Fan Motor (not shown)	916,006,001
5	Fan Blade, Evaporator	810,004,001
6	Fan Motor, Evaporator	839,001,011
7	Evaporator Fan Plate	010,058,053
8	Fan Motor Bracket, Evaporator	010,006,023
9	Self Tapping Bolt 1/4-20x1"	901,003,001
10	"U" Clip	906,007,001
11	Self Drilling Screw #8x1/2"	902,004,011
12	Relay, 24VDC coil, 110VAC switch	836,065,011
13	Fan Motor, Condenser	839,010,011
14	Fan Blade, Condenser	810,003,001
15	Fan Motor Bracket, Condenser	810,007,041
16	Compressor	SEE NOTE #1
17	1/3+ H.P. Refrigeration System	058,450,064
	1/3 H.P. Refrigeration System	010,493,074
	1/3+ H.P. Refrigeration System-Capacitor Start	156,430,054
	1/3 H.P. Refrigeration System-Capacitor Start	141,420,044
18	Screw #8-32x3/8"	901,011,021
19	Main Wiring Harness, Merlin	842,063,081
	Main Wiring Harness, Electro Mechanical	842,005,131
20	Condensate Pan	815,210,001
21	Sponge	815,037,021
22	Wiring Cover Plate	010,002,043
23	Filter Assembly (prod. run 1080 and after)	011,124,014
24	Grommet Plug	815,017,011
25	Compressor Clip	914,002,011
26	Relay 1/3 Tecumseh (not shown)	822,002,001
	Relay 1/3+ Tecumseh (not shown)	822,009,001
27	Overload 1/3 Tecumseh (not shown)	822,004,001
	Overload 1/3+ Tecumseh (not shown)	822,010,001
28	Silencer	N/A
29	#8-32x1/2" Screw	901,038,001
30	#8-32 Well Nut (Rubber)	905,026,001
31	1/4-20 Nut***	905,002,001
32	Mounting Bracket, Evap. Fan Plate	010,057,043

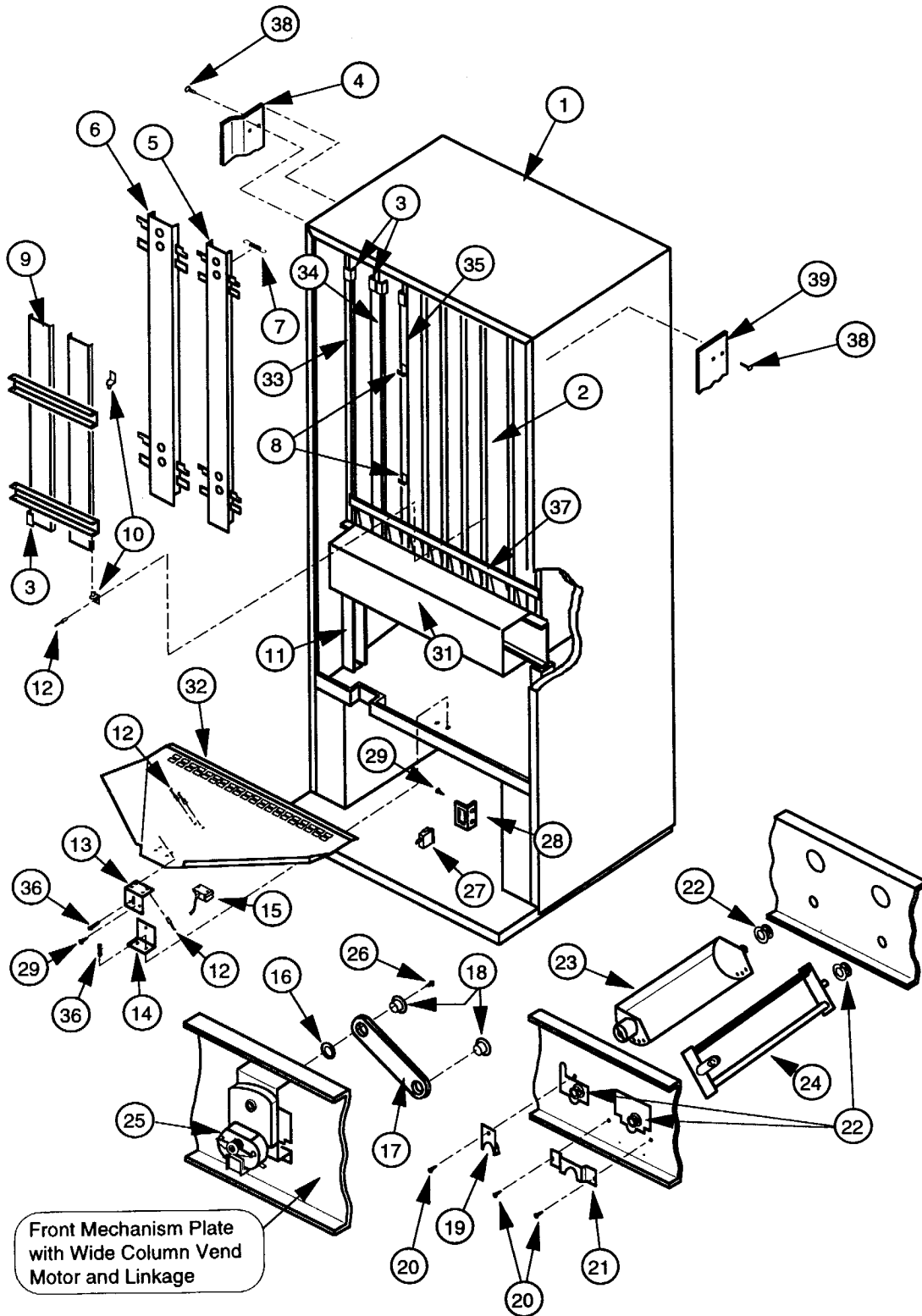
\* Denotes that a color must be specified

\*\*\* Denotes that Loc-Tite threadlocker #262 is used on motor shaft before mounting this nut.

NOTE #1: This part is not available individually. It must be ordered as an assembly.



# CABINET, VEND MECHANISM



**SECTION 7: EXPLODED VIEWS AND PART NUMBERS**

**CABINET, VEND MECHANISM (ELECTRONIC)**

<b>ITEM #</b>	<b>DESCRIPTION</b>	<b>PART NUMBER</b>
1	Foamed Cabinet Assembly 72" Wide 2 deep*	011,220,003
	Foamed Cabinet Assembly 72" Wide 3 deep*	059,210,003
	Foamed Cabinet Assembly 79" Wide 2 deep*	010,230,003
2	Vend Mechanism Assembly	SEE NOTE #1
3	Hem Channel Cap	815,024,021
4	Left Cabinet Vandal Panel 79" (1316 & after)*	141,002,033
	Left Cabinet Vandal Panel 72" (1316 & after)*	142,001,033
	Left Cabinet Vandal Panel 79" (1302 & before)*	010,022,043
	Left Cabinet Vandal Panel 72" (1302 & before)*	011,001,043
5	Backspacer Assembly, Narrow Column	SEE NOTE #1
6	Backspacer Assembly, Wide Column	SEE NOTE #1
7	Spring, Backspacer	914,001,011
8	Latch, Gate	010,725,063
9	Mechanism Gate Weld Assembly	SEE NOTE #1
10	Hinge, Gate	010,726,053
11	Mechanism Support, 2 deep	010,005,003
	Thermostat Bracket/Mechanism Support, 2 deep	010,020,023
	Mechanism Support, 3 deep	058,001,003
	Thermostat Bracket/Mechanism Support, 2 deep	010,020,023
12	Pop Rivet 1/8"	908,001,011
13	Can Chute Bracket	010,018,023
14	Can Chute Tie Bracket	010,017,043
15	Delivery Sensor	836,004,011
16	Washer, Nylon 1/2" I.D.	904,001,001
17	Linkage Arm (Wide Column Motor only)	809,005,021
18	Nyliner 3/8	916,011,001
19	Rotor Retainer (Narrow Column only)	815,012,011
20	Screw #8-32x3/8"	901,011,021
21	Journal Plate (Wide Column only)	010,708,003
22	Nyliner 1/2	916,010,001
23	Rotor 2 Deep (Narrow Column only)	809,002,061
	Rotor 3 Deep (Narrow Column only)	809,007,041
	Rotor 3 Deep Plus** (Narrow Column only)	809,027,001
	Rotor 3 Deep 16oz. (Narrow Column only)	809,022,001
	Rotor 3 Deep Plus** 16oz. (Narrow Column only)	809,026,001
24	Oscillator 2 Deep (Wide Column only)	809,003,041
	Oscillator 3 Deep (Wide Column only)	809,008,041
	Oscillator 3 Deep Plus** (Wide Column only)	809,025,031
25	Vend Motor(Wide Col.)-2 Deep Ass'y	010,780,014
	Vend Motor(Wide Col.)-3 Dp. Bot./79" 3 Dp. Can	058,940,034
	Vend Motor(Narrow Col.)-2 Deep & 72" 3 Deep	010,770,024
	Vend Motor(Narrow Col.)-3 Dp. Bot./79" 3 Dp. Can	058,950,014
26	Self Tapping Screw with Star Washer	901,006,001
27	Door Switch	835,003,011
28	Bracket, Door Reset Button	010,045,033

**SECTION 7: EXPLODED VIEWS AND PART NUMBERS**

29	Self Drilling Screw #8x1/2"	902,004,011
30	Cabinet Harness (Not Shown)	SEE NOTE #1
31	Motor Cover, Wide Cabinet	010,029,103
	Motor Cover, Narrow Cabinet	036,003,053
32	Can Chute Assembly 2 Deep	010,060,014
	Can Chute Assembly 3 Deep	058,020,014
	Can Chute 3 Deep Plus**	201,001,003
33	Hem Angle - Left - 2 Deep 79 1/2"	010,717,093
	Hem Angle - Left - 2 Deep 72"	011,708,093
	Hem Angle - Left - 3 Deep 79 1/2"	058,711,033
	Hem Angle - Left - 3 Deep 72"	059,707,043
34	Hem Channel - 2 Deep 79 1/2"	010,715,083
	Hem Channel - 2 Deep 72"	011,711,083
	Hem Channel - 3 Deep 79 1/2"	058,709,013
	Hem Channel - 3 Deep 72"	059,706,023
35	Hem Angle - Right - 2 Deep 79 1/2"	010,716,093
	Hem Angle - Right - 2 Deep 72"	011,709,093
	Hem Angle - Right - 3 Deep 79 1/2"	058,712,033
	Hem Angle - Right - 3 Deep 72"	059,708,043
36	Self Tapping Screw 1/4 - 20 X 1"	901,003,001
37	Tie Strip	SEE NOTE #1
38	Rivet 1/4"	908,003,001
39	Right Vandal Panel 79"	102,122,013
	Right Vandal Panel 72"	011,002,003
	• Rear Can Retainer (Not Shown)	810,007,041
	• Wire Tie, 4" (Not Shown; Holds S.O. Harness)	916,007,001
	• Wire Tie, Large (Not Shown)	916,063,001

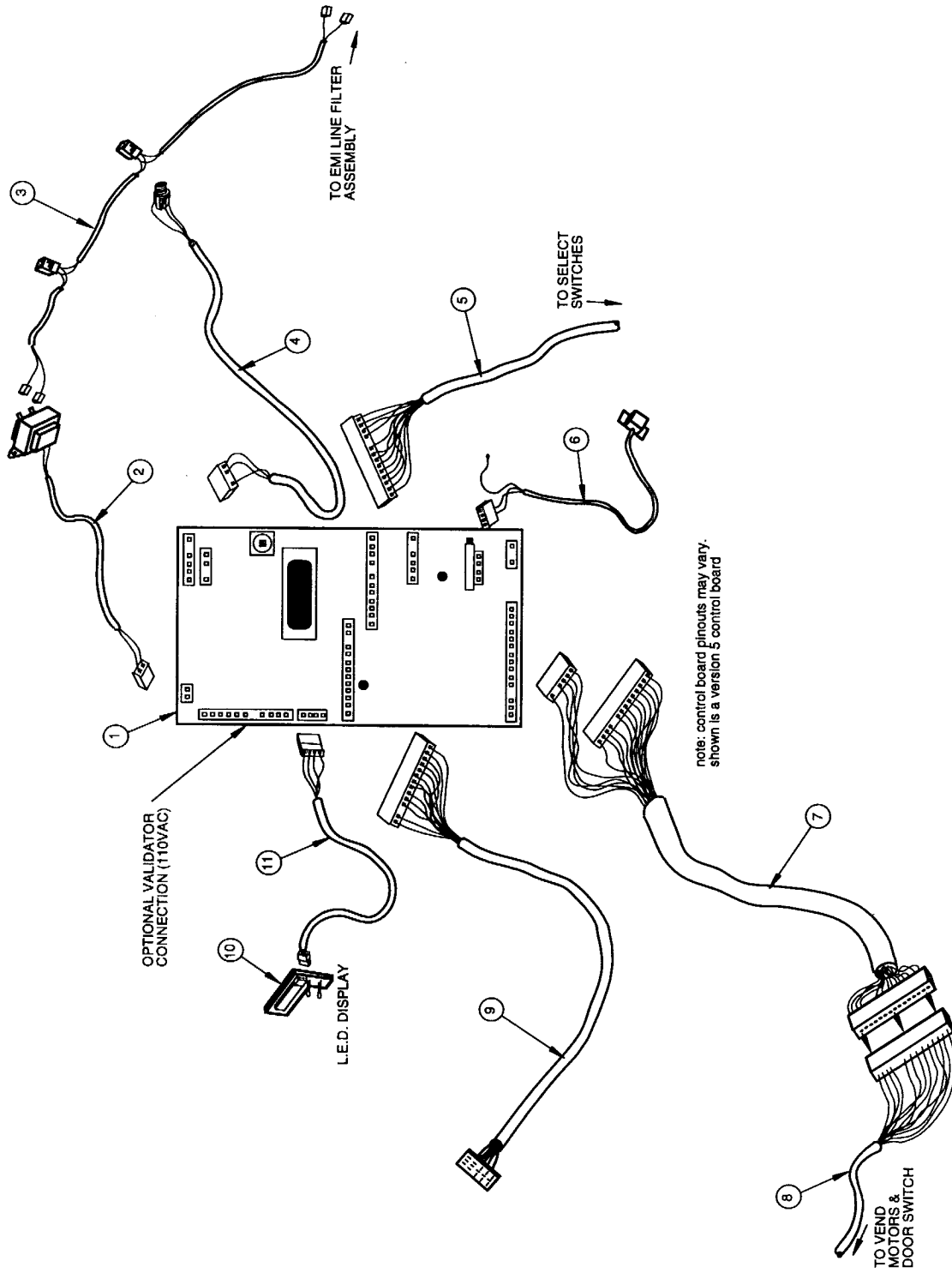
\* Denotes that a color must be specified

\*\* Denotes 3 Deep Plus (any 3 deep vendor with serial number 1352XX-XXXX and greater)

NOTE #1: There are various parts, please specify model and serial number at the time of order



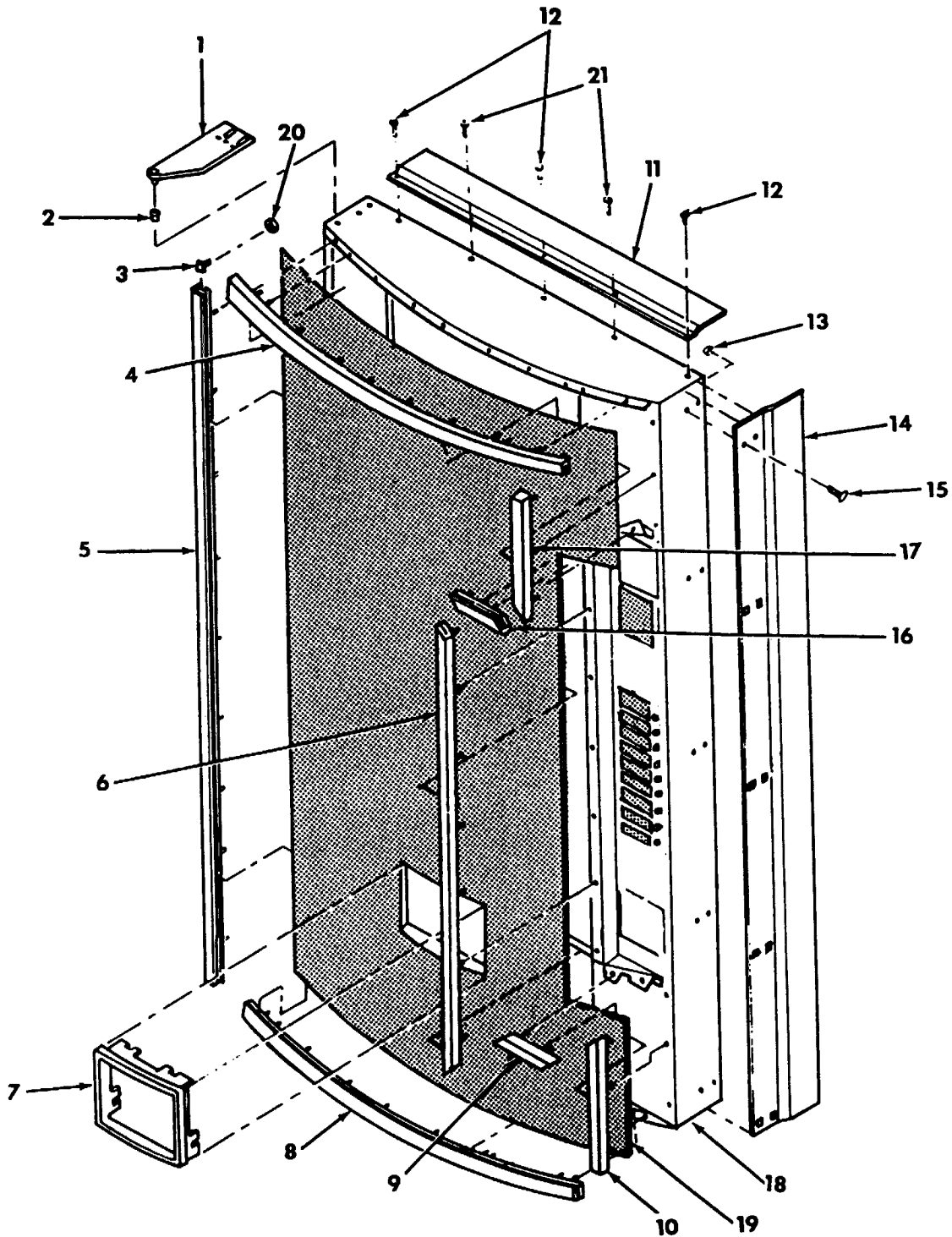
# CONTROL BOARD & WIRING



## CONTROL BOARD &amp; WIRING Merlin 2000

ITEM #	DESCRIPTION	PART NUMBER
1	Control Board, 5.11 (See Note #3)	836,052,081
	Control Board, 5.06 (See Note #3)	836,052,011
	Control Board, 2.16a (See Note #3)	836,032,011
	Control Board, 1.16a (See Note #3)	836,031,011
	Control Board, 1.07ha (See Note #3)	836,003,001
•	Circuit Board Cover, Merlin 2000*	010,559,123
2	Transformer (includes harness to control board)	010,572,033
3	part of main door harness (Item # 7)	See Item #7
4	Dual Output DEX Harness (5.07 and higher only)	842,134,011
5	Select Switch Harness, 10 Select	017,903,003
	Select Switch Harness, 9 Select (RVCCE)	143,901,003
	Select Switch Harness, 8 Select	012,543,003
	Select Switch Harness, 7 Select (RVCCE)	141,906,003
	Select Switch Harness, 6 Select (Wide Cabinet)	040,509,003
	Select Switch Harness, 5 Select (RV??E 200-5)	043,506,003
6	Delivery Sensor (includes harness)	836,004,011
7	Door Harness, 10 Select	017,905,034
	Door Harness, 9 Select (RVCCE)	143,904,034
	Door Harness, 8 Select	012,912,034
	Door Harness, 7 Select (RVCCE)	141,911,024
	Door Harness, 6 Select (Wide Cabinet)	105,903,084
	Door Harness, 5 Select (RV??E 200-5)	043,904,034
8	Cabinet Harness, 10 Select	017,904,013
	Cabinet Harness, 9 Select (RVCCE)	017,904,013
	Cabinet Harness, 8 Select	012,907,014
	Cabinet Harness, 7 Select (RVCCE)	012,907,014
	Cabinet Harness, 6 Select (Wide Cabinet)	040,903,003
	Cabinet Harness, 5 Select (RV??E 200-5)	043,903,003
9	Changer Harness (15 way plug, 24 volt changer)	010,914,094
10	L.E.D. Assembly	010,593,024
11	L.E.D. Harness	842,081,061
•	Item not shown for clarity	

# COCA-COLA: VANDAL RESISTANT DOOR, TRIM



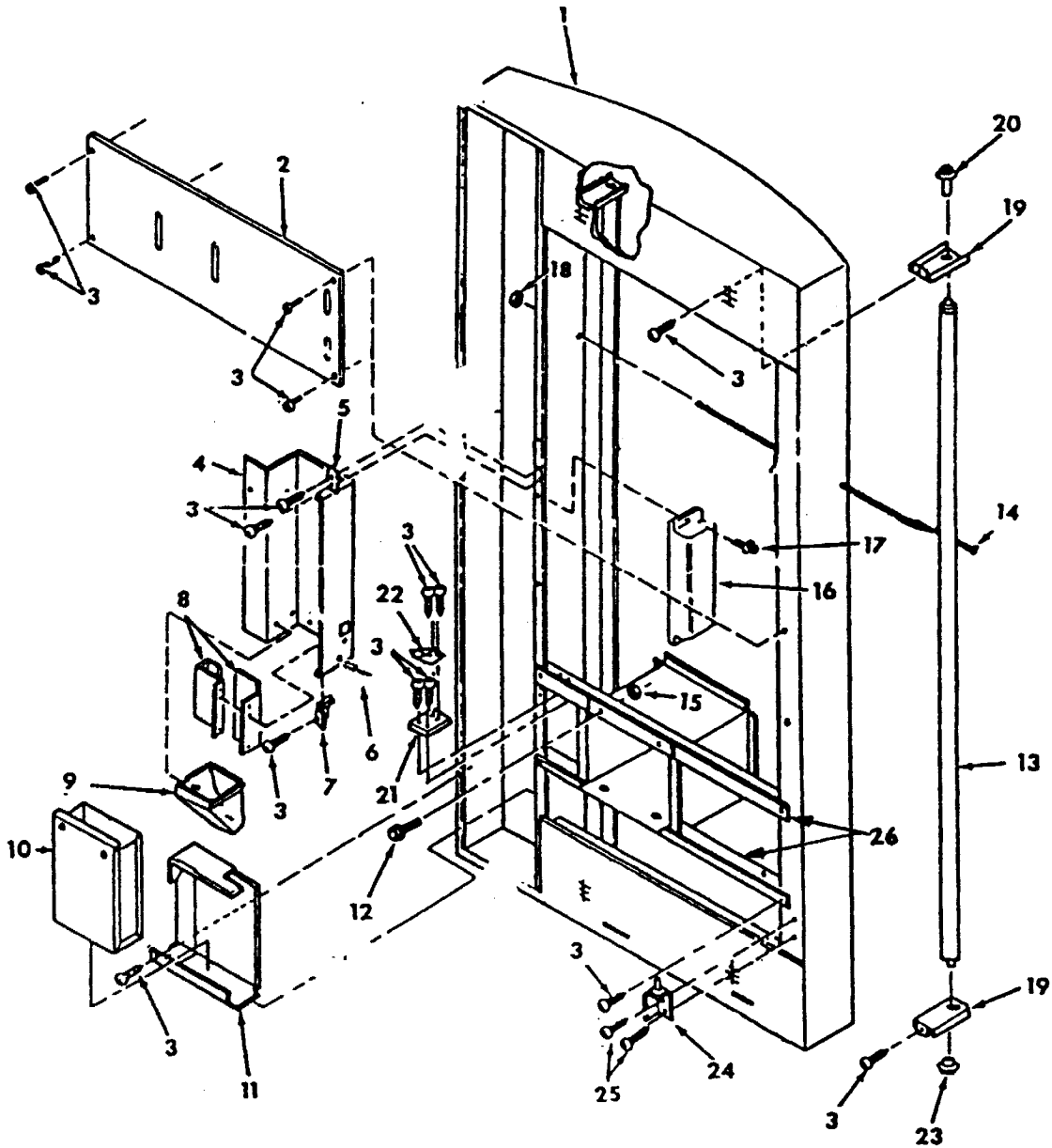
## Main Door, Front

ITEM #	DESCRIPTION	PART NUMBER
1	Top Door Hinge	810,002,021
2	Top Door Bushing	803,003,001
3	T-Screw, #8-32	901,001,071
4	Top Trim, Coke 79" Wide	141,552,003
	Top Trim, Coke 72" Wide	141,552,003
5	Left Trim, Coke 79" Wide	141,553,003
	Left Trim, Coke 72" Wide	142,502,003
6	Right Insert Trim, Coke 79" Wide	141,556,003
	Right Insert Trim, Coke 72" Wide	141,556,003
7	Port Trim	815,019,041
8	Bottom Trim, Coke 79" Wide	141,552,003
	Bottom Trim, Coke 72" Wide	141,552,003
9	Bottom Insert Trim, Coke 79" Wide	141,558,003
	Bottom Insert Trim, Coke 72" Wide	141,558,003
10	Right Side Bottom Trim, Coke 79" Wide	141,555,003
	Right Side Bottom Trim, Coke 72" Wide	141,555,003
11	Rain Guard, Wide Vendor	010,518,053
	Rain Guard, Narrow Vendor	036,503,053
12	Pop Rivet, 1/8"	908,001,011
13	Nut, 1/4-20	905,002,001
14	Right Vandal Panel 79"	010,519,073
	Right Vandal Panel 72"	011,501,083
15	Carriage Bolt 1/4-20x1/2"	901,007,001
16	Top Insert Trim, Coke 79" Wide	141,557,003
	Top Insert Trim, Coke 72" Wide	141,557,003
17	Top Trim, Coke 79" Wide	141,554,003
	Top Trim, Coke 72" Wide	141,554,003
18	Door Weld Assembly, Coke 79"	141,510,013
	Door Weld Assembly, Coke 72" Wide	142,510,013
19	Sign	SEE NOTE #1
20	Nut, #8-32	905,001,001
21	Self Drilling Screw, #8x1/2"	902,004,011

NOTE #1: There are various parts, please specify model and serial number at the time of order



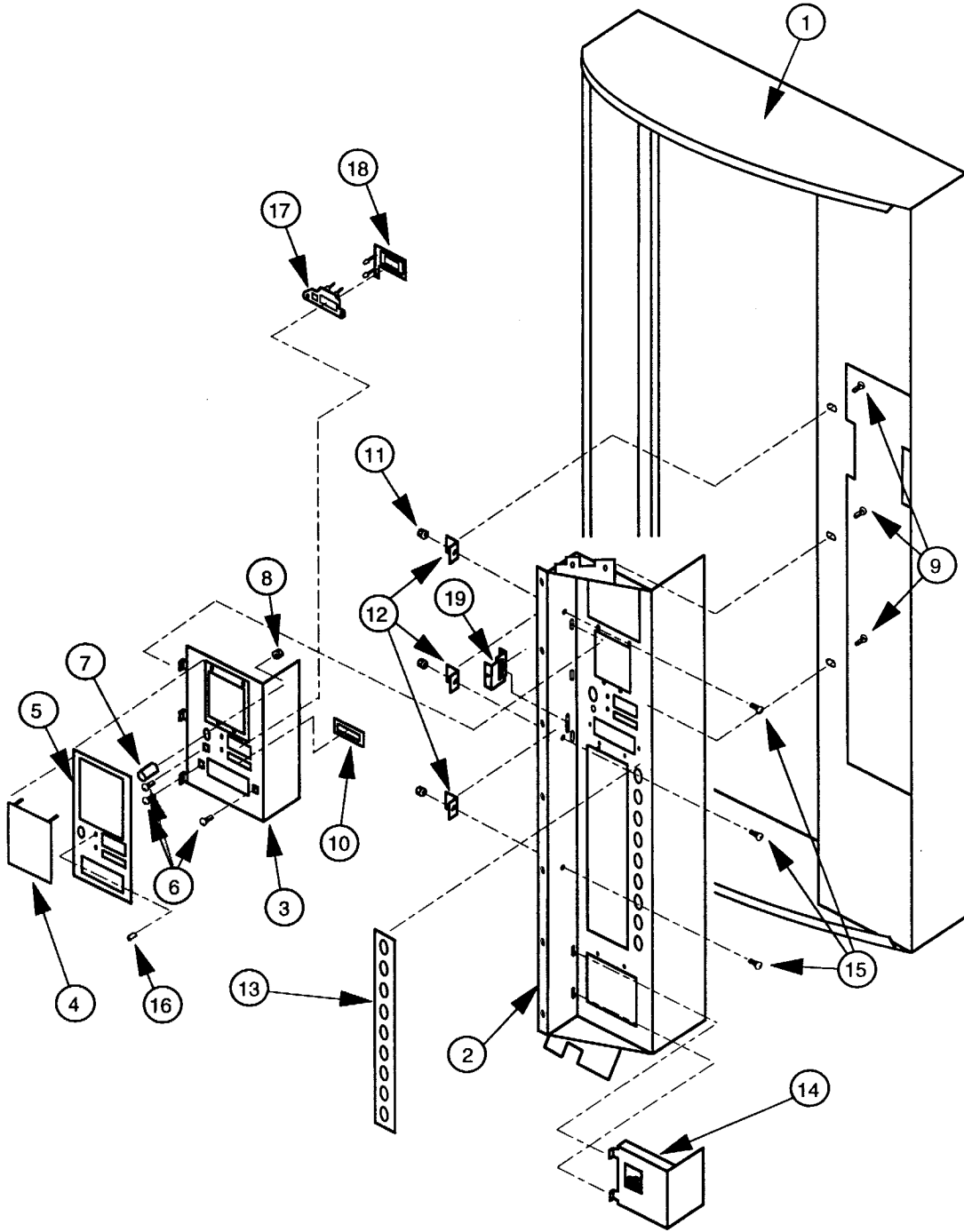
# COCA-COLA: MAIN DOOR, REAR ASSEMBLY



**Main Door, Rear Assembly**

<b>ITEM #</b>	<b>DESCRIPTION</b>	<b>PART NUMBER</b>
1	Main Door Welded Assembly, 79" Wide Vendors	141,510,013
	Main Door Welded Assembly, 72" Wide Vendors	142,510,013
2	Lamp Guard, Wide Vendors	012,514,133
	Lamp Guard, Narrow Vendor	040,501,103
3	Screw, #8-32x3/8"	901,011,021
4	Changer Door	010,544,303
5	Changer Door Hinge	010,531,003
6	Pop Rivet, 1/8"	908,004,001
7	Changer Door Hinge	010,531,003
8	Bottom Coin Chute Assembly (To Coin Box)	012,593,004
9	Coin Hopper	815,015,021
10	Coin Box Welded Assembly	010,580,023
11	Coin Box Housing	010,537,063
12	Carriage Bolt, 1/4-20x1/2"	901,007,001
13	Lamp, High Output For 79" Vendors	841,001,001
	Lamp, High Output For 72" Vendors	841,002,001
14	Tie Rod	811,001,001
15	Keps Nut, 1/4-20	905,002,001
16	Ballast Assembly, 79" Wide Vendors	010,950,084
	Ballast Assembly, 72" Wide Vendors	011,930,084
17	Self Drilling Screw, #8-32	902,004,011
18	Elastic Stop Nut	905,004,001
19	Lamp Bracket	010,517,003
20	Top Lampholder (Spring-Loaded)	842,001,011
21	Latch Roller Bracket	010,516,073
22	Burst Open Latch Strike (For Inner Door)	812,003,001
23	Bottom Lampholder	842,002,011
24	Bottom Inner Door Hinge	010,550,014
25	Self Tapping Screw, 1/4-20x1"	901,003,001
26	Port Brace, Wide Vendors	010,515,203
	Port Brace, Narrow Vendor	036,502,053

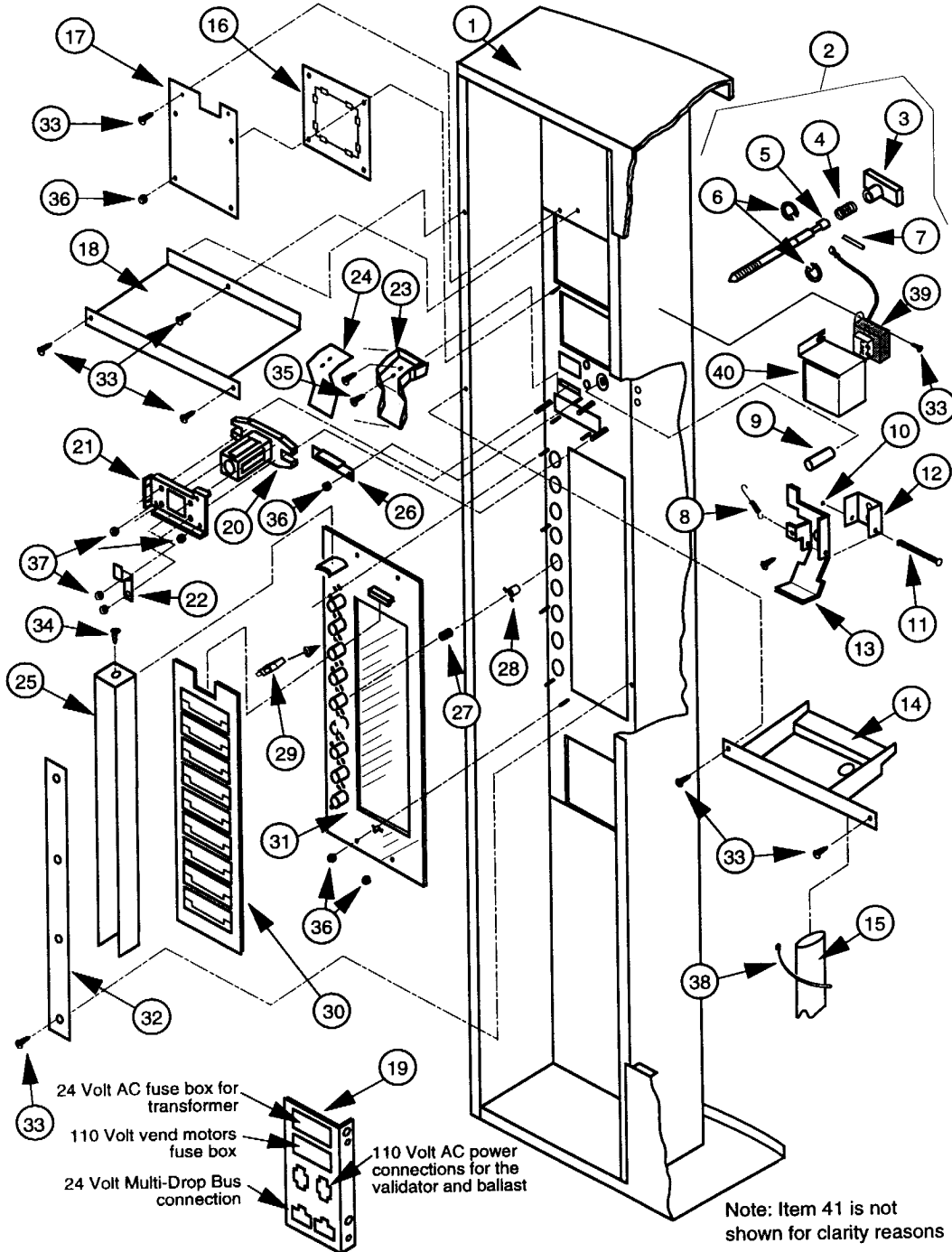
# COCA-COLA: VANDAL RESISTANT DOOR, FRONT



**Vandal Resistant Door, Front**

<b>ITEM #</b>	<b>DESCRIPTION</b>	<b>PART NUMBER</b>
1	Door Welded Assembly, 79" Coke	141,510,013
	Door Welded Assembly, 72" Coke	142,510,013
2	Control Panel, Coke 9 Select	143,501,073
3	Security Plate Welded Assembly	141,550,003
4	Validator Cover, Coke	010,535,003
5	Security Plate Decal, Electronic	845,396,111
6	T-Bolt, 1/4-20x1"	901,037,031
7	Bushing, Button Coin Return	803,030,011
8	Hex Jam Nut 9/16-18 UNF2A	905,019,001
9	Screw #8-32x3/8"	901,011,021
10	Coin Plate, Coke	141,516,003
11	Keps Nut, 1/4-20	905,002,001
12	Hold Down Angle	123,505,003
13	Decal, Select Button	845,383,041
14	Coin Cup Mounting Plate Welded Assembly	123,550,003
15	Carriage Bolt 1/4-20x1/2"	901,007,001
•	L.E.D. Assembly (Items 16, 17 &18)	010,593,024
16	L.E.D. Lens	N/A
17	L.E.D. Window	N/A
18	L.E.D. Display	N/A
19	Hole Block, Lock Cover	141,509,003

# COCA-COLA: VANDAL RESISTANT DOOR, REAR

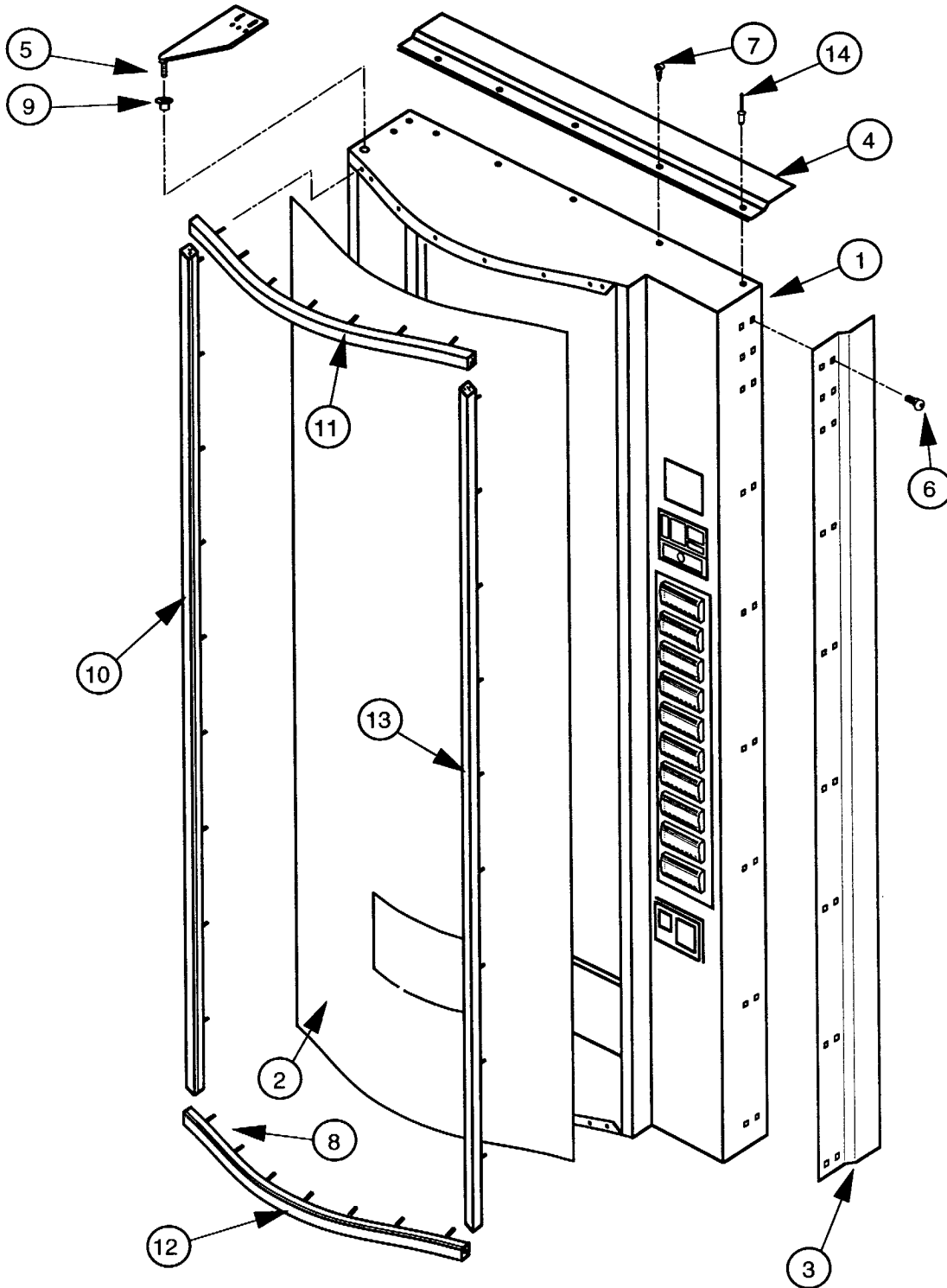


**Vandal Resistant Door, Rear**

<b>ITEM #</b>	<b>DESCRIPTION</b>	<b>PART NUMBER</b>
1	Door Welded Assembly, 79" Coke	141,510,013
	Door Welded Assembly, 72" Coke	142,510,013
2	Flush Mount T-Handle Assembly	812,176,001
3	Flush Mount T-Handle Only	SEE NOTE #2
4	Spring	SEE NOTE #2
5	T-Handle Stud	SEE NOTE #2
6	Retaining Ring	SEE NOTE #2
7	Pin, T-Handle Stud	SEE NOTE #2
8	Sold Out Spring	914,003,001
9	Button, Coin Return Lever	803,031,001
10	Retainer Ring 5/32"	906,005,001
11	Roller Pin, Door Lifter	811,002,011
12	Hinge, Coin Return Lever	141,506,073
13	Coin Return Lever	141,504,103
14	Catch Basin, Bill Validator	095,509,103
15	Catch Basin, Drain Tube	925,038,021
16	P.O.S. Window	815,007,031
17	P.O.S. Window Plate	123,503,053
18	Security Shelf	141,517,013
19	Fuse Bracket, I.E.C.	141,522,013
20	T-Handle Housing	SEE NOTE #2
21	T-Handle Brace	141,513,063
22	Lever Stop	141,514,003
23	Coin Chute	815,001,051
24	Coin Chute Cover	815,002,051
25	Splash Guard	815,169,021
26	Coin Ramp	141,508,043
27	Spring, Select Button	914,020,011
28	Select Button	815,165,031
29	Switch, Miniature	835,001,021
30	Carrier Strip Assembly	815,167,001
31	Button Panel	815,168,041
32	Retaining Strap	141,507,001
33	Screw, #8-32x3/8"	901,011,021
34	Screw, Self Drilling #8x1/2"	902,001,001
35	Screw #6-32x3/8"	901,004,021
36	Nut #8-32	905,001,001
37	Nut, 1/4-20	905,002,001
38	Wire Tie, Large	916,054,001
39	Transformer Assembly	010,572,033
40	Transformer Cover	010,063,023
41	72" Ballast Assembly	011,930,084
	79" Ballast Assembly	010,950,084

NOTE #2: This part is not available individually. It must be ordered as an assembly.

# PEPSI-COLA & GENERIC MODELS: MAIN DOOR, FRONT ASSEMBLY



## PEPSI/COLD DRINK MAIN DOOR, FRONT ASSEMBLY

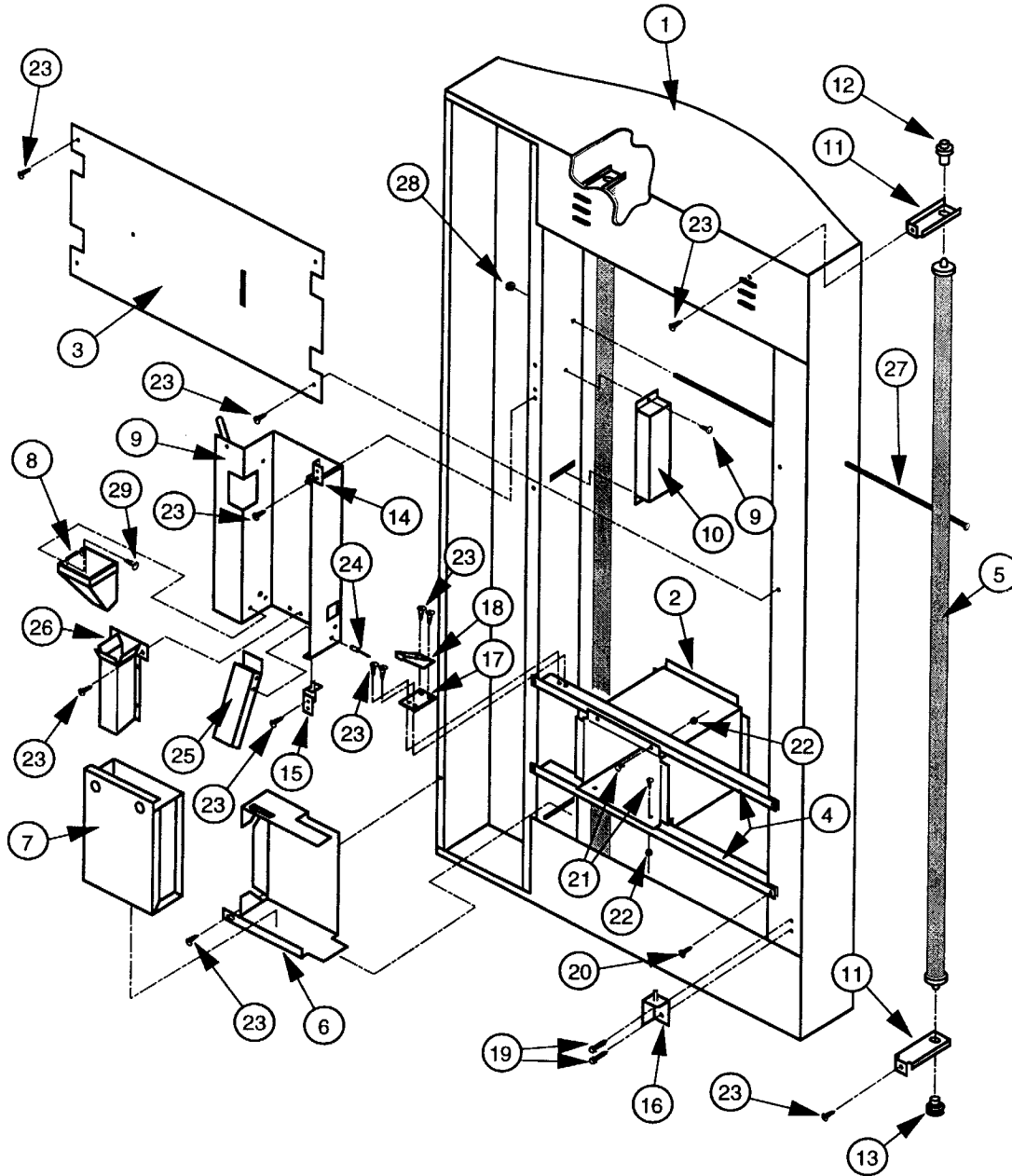
ITEM #	DESCRIPTION	PART NUMBER
1	Door Weld Assembly 79" (Pepsi)*	012,520,003
	Door Weld Assembly 79" (Cold Drink)*	020,510,003
	Door Weld Assembly 72" (Pepsi)*	013,510,003
	Door Weld Assembly 72" (Cold Drink)*	019,510,003
2	Sign	SEE NOTE #1
3	Right Vandal Panel 79"**	010,519,003
	Right Vandal Panel 72"**	011,501,003
4	Rain Guard, Wide Vendors	010,518,003
5	Top Door Hinge	810,002,001
6	Carriage Bolt 1/4 - 20x1/2"	901,007,001
7	Self Drilling Screw #8-18x1/2"	902,004,001
8	"T" Screw #8-32x3/4"	901,001,001
9	Top Door Bushing	803,003,001
10	Left Side Trim 79" (Pepsi)	141,553,003
	Left Side Trim 72" (Pepsi)	142,502,003
	Left Side Trim 79" (Cold Drink)	032,505,003
	Left Side Trim 72" (Cold Drink)	019,507,003
11	Top Trim 79" & 72" (Pepsi)	012,533,003
	Top Trim 79" & 72" (Cold Drink)	032,504,003
12	Bottom Trim 79" & 72" (Pepsi)	012,533,003
	Bottom Trim 79" & 72" (Cold Drink)	032,507,003
13	Right Side Trim 79" (Pepsi)	012,554,003
	Right Side Trim 72" (Pepsi)	013,507,003
	Right Side Trim 79" (Cold Drink)	032,506,003
	Right Side Trim 72" (Cold Drink)	019,508,003
14	Pop Rivet Stainless Steel 1/8" Dia.	908,001,001

\* Denotes that a color must be specified

NOTE #1: There are various parts, please specify model and serial number at the time of order



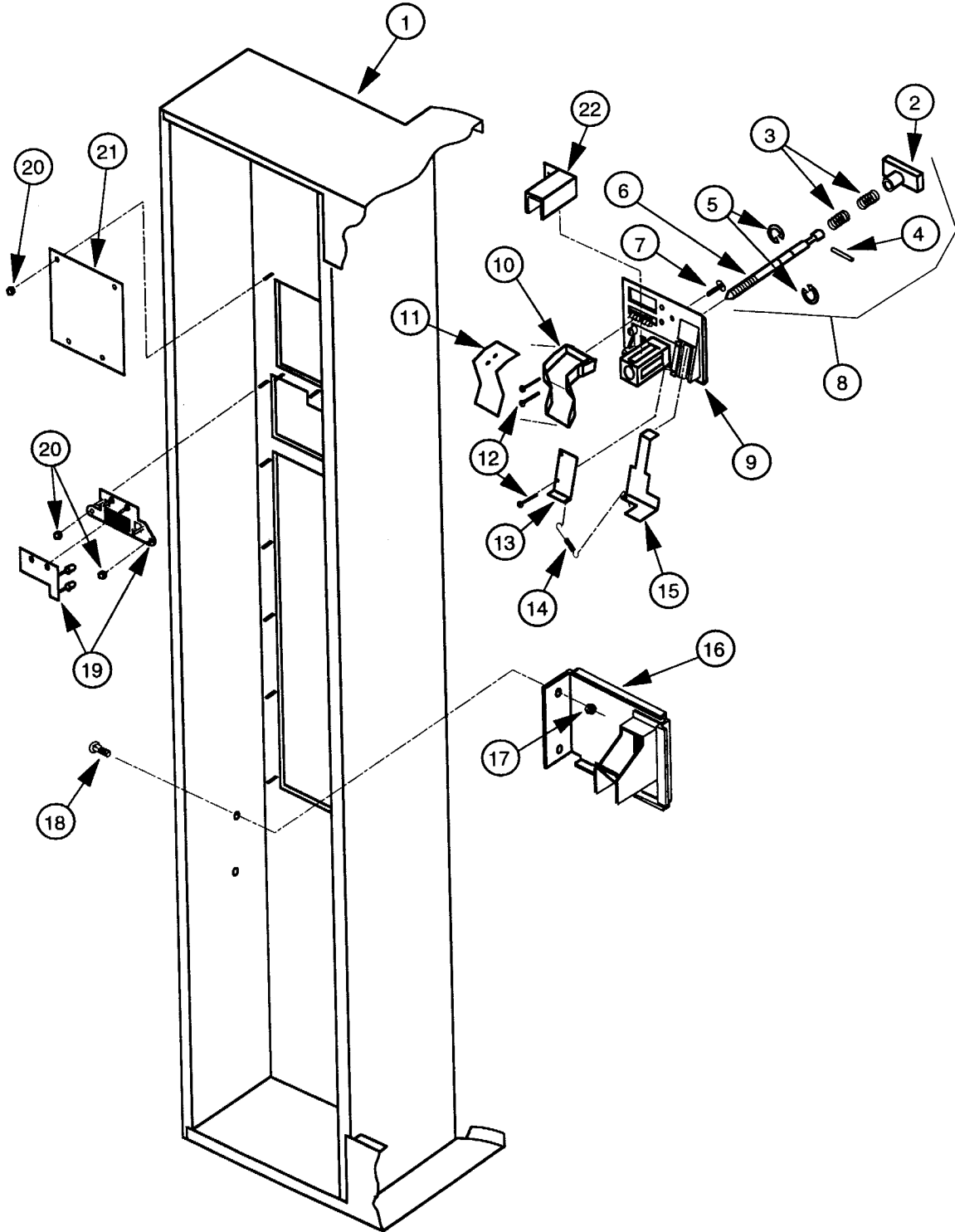
# PEPSI-COLA & GENERIC MODELS: MAIN DOOR, REAR ASSEMBLY



## PEPSI/COLD DRINK MAIN DOOR, REAR ASSEMBLY

ITEM #	DESCRIPTION	PART NUMBER
1	Door Weld Assembly 79" (Pepsi)*	012,520,003
	Door Weld Assembly 79" (Cold Drink)*	020,510,003
	Door Weld Assembly 72" (Pepsi)*	013,510,003
	Door Weld Assembly 72" (Cold Drink)*	019,510,003
2	Port Body W/A, P.C./C.D. (Wide Round)	012,560,003
3	Lamp Guard, Wide	012,514,003
	Lamp Guard, Narrow	040,501,103
4	Port Brace, Wide	010,515,193
5	72" Slimline Lamp (For 79" Vendor)	841,005,001
	64" Slimline Lamp (For 72" Vendor)	841,006,001
6	Coin Box Housing	010,537,003
7	Coin Box Welded Assembly	010,580,003
8	Coin Hopper	815,015,001
9	Changer Door	010,544,003
	Changer Door Assembly	011,580,004
10	79" Ballast Ass'y (With Lampholders & Wire)	012,591,074
	72" Ballast Ass'y (With Lampholders & Wire)	013,920,054
11	Lamp Bracket	010,517,003
12	Top Lampholder	842,003,001
13	Bottom Lampholder	842,004,001
14	Changer Door Hinge, Top	010,525,003
15	Changer Door Hinge, Bottom	010,524,003
16	Bottom Hinge, Inner Door Hinge Ass'y	010,550,003
17	Latch Roller Bracket	010,516,003
18	Latch Strike (For Inner Door)	812,003,001
19	Screw 1/4-20x1"	901,003,001
20	Self Drilling Screw #8-18x1/2"	902,004,001
21	Carriage Bolt 1/4-20x1/2"	901,007,001
22	Nut 1/4-20	905,002,001
23	Screw #8-32x3/8"	901,011,001
24	Pop Rivet 1/8"	908,004,001
25	Bottom Coin Chute Ass'y P.C./C.D. (To Coin Box)	012,593,004
26	Hopper Chute Assembly (To Coin Cup)	012,538,003
27	Tie Rod, Door	811,001,001
28	Elastic Stop Nut #8-32	905,004,001
29	Screw #8-32x1/2" with washers	901,006,001
*	Denotes that a color must be specified	

# PEPSI-COLA & GENERIC MODELS: SELECT PANEL, FRONT ASSEMBLY



## PEPSI/COLD DRINK SELECT PANEL, FRONT ASSEMBLY

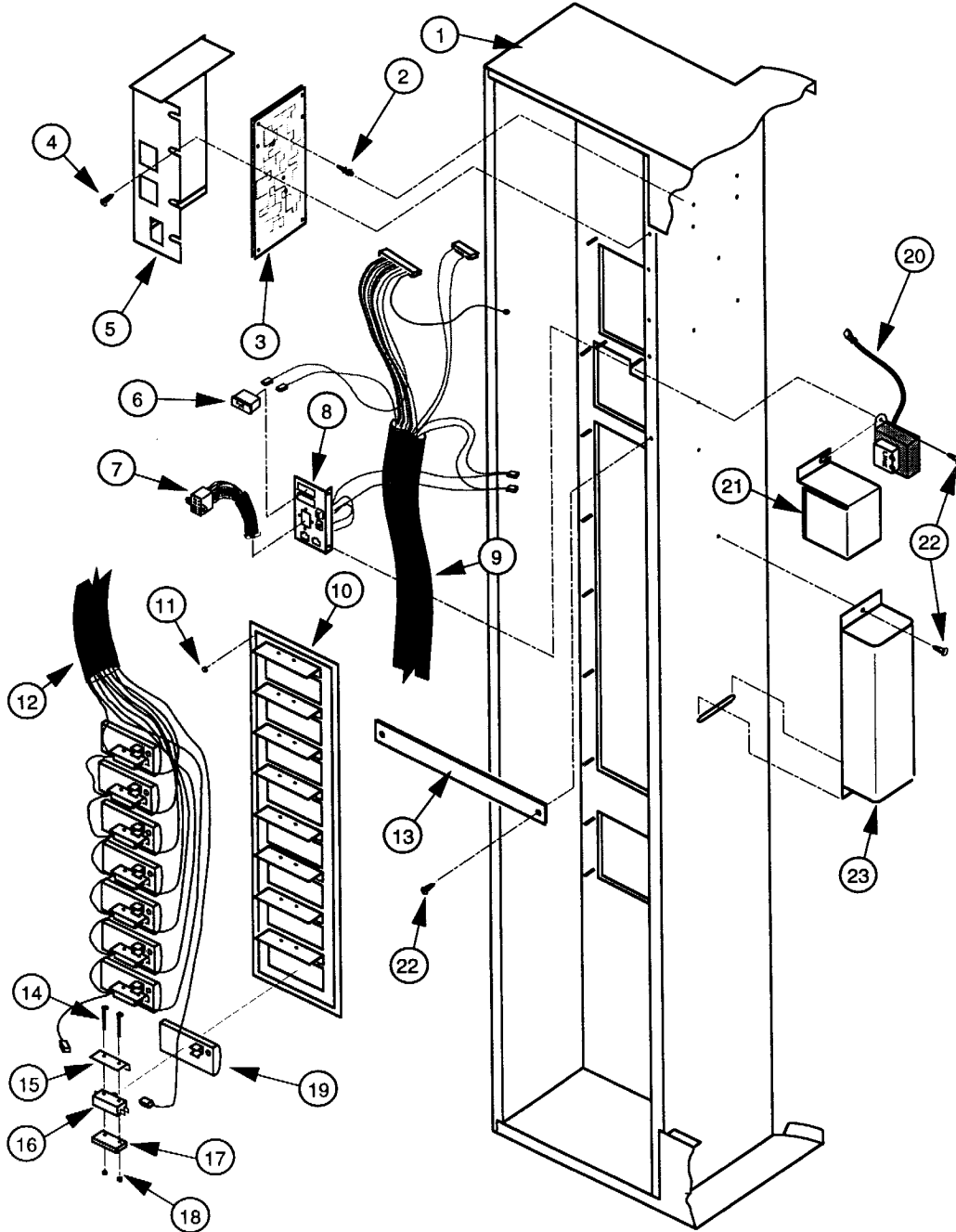
ITEM #	DESCRIPTION	PART NUMBER
1	Door Weld Assembly 79" (Pepsi)*	012,520,003
	Door Weld Assembly 79" (Cold Drink)*	013,510,003
	Door Weld Assembly 72" (Pepsi)*	013,510,003
	Door Weld Assembly 72" (Cold Drink)*	019,510,003
2	T-Handle Body (All Except Vandal Resist. Door)	812,134,001
3	Spring	SEE NOTE #1
4	Pin, T-Handle	SEE NOTE #2
5	Retainer Ring	SEE NOTE #2
6	T-Handle Stud	803,006,001
7	T-Screw 8-32x3/4"	901,001,001
8	T-Handle Assembly	812,001,001
9	Coin Insert, P.C./C.D.	809,006,001
	Coin Insert Assembly, P.C./C.D. New Merlin	012,910,004
10	Coin Chute	815,001,001
11	Coin Chute Cover	815,002,001
12	Self Tapping Screw #6-32x1/4"	901,004,001
13	Spring Plate	010,511,003
14	Coin Return Spring	914,003,001
15	Scavenger Link (Coin Return Lever)	810,001,001
16	Coin Return Cup Welded Assembly	012,595,003
17	Nut 1/4-20	905,007,001
18	Carriage Bolt 1/4-20x1/2"	901,007,001
19	L.E.D. Assembly	010,593,004
20	Nut #8-32	905,001,001
21	Validator Cover	012,508,003
22	Lock Cylinder Cover	161,532,003

\* Denotes that a color must be specified

NOTE #1: *There are various parts, please specify model and serial number at the time of order*

NOTE #2: *This part is not available individually. It must be ordered as an assembly.*

# PEPSI-COLA & GENERIC MODELS: SELECT PANEL, REAR ASSEMBLY



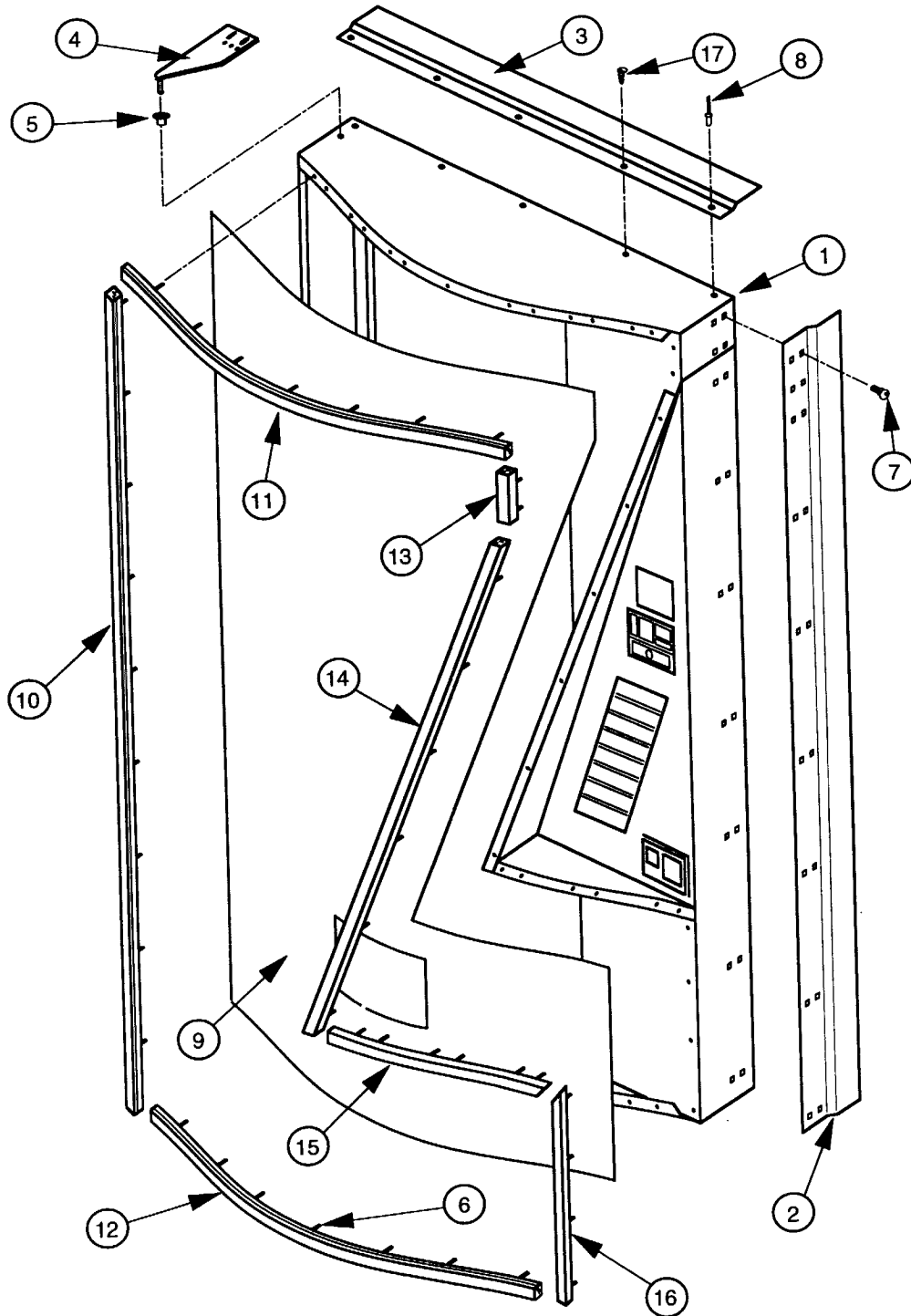
## PEPSI/COLD DRINK SELECT PANEL, REAR ASSEMBLY

ITEM #	DESCRIPTION	PART NUMBER
1	Door Weld Assembly 79" (Pepsi)*	012,520,003
	Door Weld Assembly 79" (Cold Drink)*	013,510,003
	Door Weld Assembly 72" (Pepsi)*	013,510,003
	Door Weld Assembly 72" (Cold Drink)*	019,510,003
2	P.C. Board Spacer	916,027,021
3	Control Board, 11.06 (See Note #3)	836,068,001
	Control Board, 5.11 (See Note #3)	836,052,081
	Control Board, 5.06 (See Note #3)	836,052,021
4	Self Drilling Screw #8-18x1/2"	902,004,001
5	Control Board Cover	141,903,003
6	Fuse Box Assembly (includes two 4 amp fuses)	012,166,004
7	Changer Plug Harness	010,914,004
8	Changer Plug Bracket-Merlin	010,561,003
9	Door Harness	SEE NOTE #1
10	Control Panel Weld Assembly-10 select*	017,530,003
	Control Panel Weld Assembly-8 select*	012,510,003
	Control Panel Weld Assembly-7 select*	034,520,003
	Control Panel Weld Assembly-6 select*	040,530,003
11	Nut #8-32	905,001,001
12	Select Panel Harness	SEE NOTE #1
13	Panel Strap (optional)	010,531,003
14	Screw #4-40x1"	901,005,001
15	Spring Shield	815,164,001
16	Switch, Large	835,012,001
17	Switch Spacer	815,018,001
18	Nut #4-40	905,003,001
19	Button Assembly	815,025,001
20	Transformer Assembly, Merlin	010,572,003
21	Transformer Cover	010,063,003
22	Self Tapping Screw #8-32x1/2"	901,002,001
23	Ballast, Slimline (Ballast Only)	838,002,001
•	Control Panel Assembly (with buttons & switches)	017,920,004
*	Denotes that a color must be specified	

NOTE #1: *There are various parts, please specify model and serial number at the time of order*

NOTE #3: *The control boards listed are all boards that we stock. For warranty replacements: If your board is not listed, go up to the next closest revision. Example- from a 5.02 to a 5.06*

# DR PEPPER: MAIN DOOR ASSEMBLY, FRONT



**DR PEPPER MAIN DOOR ASSEMBLY, FRONT**

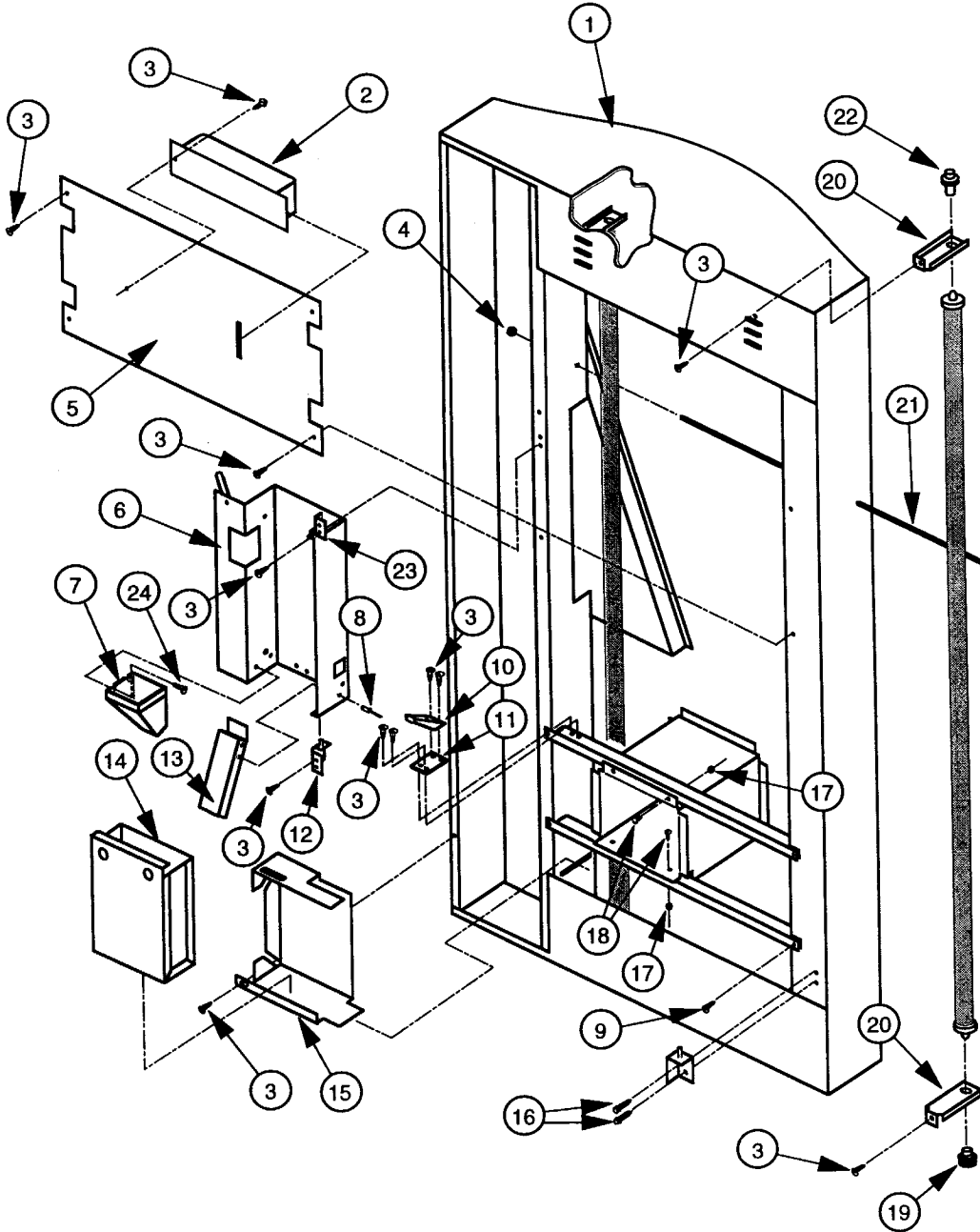
<b>ITEM #</b>	<b>DESCRIPTION</b>	<b>PART NUMBER</b>
1	Main Door Welded Assembly, Dr Pepper 79"	100,510,014
	Main Door Welded Assembly, Dr Pepper 72"	101,510,033
2	Right Vandal Panel, 79"	010,519,073
	Right Vandal Panel, 72"	011,501,083
3	Rain Guard, Wide	010,518,053
4	Top Hinge, Left	810,002,021
5	Nyliner 1/2"	916,012,001
6	T-Screw #8-32x3/4"	901,001,071
7	Carriage Bolt 1/4-20x1/2"	901,007,001
8	Pop Rivet 1/8"	908,004,001
9	Sign	SEE NOTE #1
10	Trim, Dr Pepper 79" Vertical Left Side	141,553,003
	Trim, Dr Pepper 72" Vertical Left Side	019,507,003
11	Trim, Dr Pepper 79" Top & Bottom	141,552,003
	Trim, Dr Pepper 72" Top	101,502,073
12	Trim, Dr Pepper 79" Top & Bottom	141,552,003
	Trim, Dr Pepper 72" Bottom	141,552,003
13	Trim, Vertical Top Right Side (79" Vendor only)	100,518,003
14	Trim, Dr Pepper 79" Control Panel Side	100,517,003
	Trim, Dr Pepper 72" Control Panel Side	101,503,003
15	Trim, Dr Pepper 79" & 72" Bot. Cont. Pnl. Side	100,516,003
16	Trim, Dr Pepper 79" & 72" Vert. Bot. Right Side	100,515,003
17	Self Drilling Screw #8x1/2"	902,004,011

\* Denotes that a color must be specified

NOTE #1: There are various parts, please specify model and serial number at the time of order



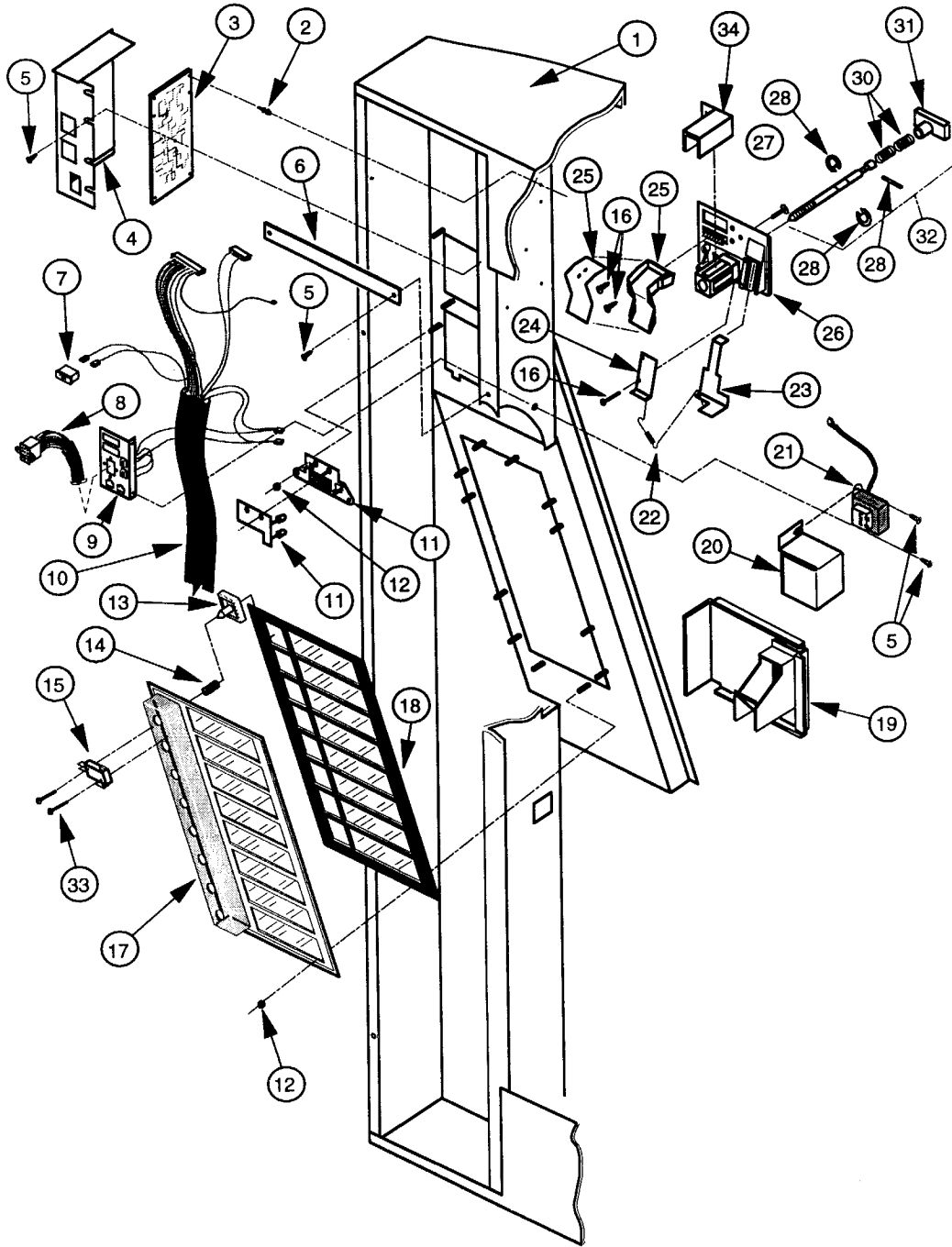
# DR PEPPER: MAIN DOOR ASSEMBLY, REAR



## DR PEPPER MAIN DOOR ASSEMBLY, REAR

ITEM #	DESCRIPTION	PART NUMBER
1	Main Door Welded Assembly, Dr Pepper 79**	100,510,014
	Main Door Welded Assembly, Dr Pepper 72**	101,510,033
2	High Output Ballast Assembly 79"	100,930,074
	High Output Ballast Assembly 72"	101,910,064
3	Screw #8-32x1/2"	901,002,001
4	Elastic Stop Nut #8-32	905,004,001
5	Lamp Guard, Wide	012,514,133
6	Changer Door	010,544,303
	Changer Door Assembly	011,580,004
7	Coin Hopper	815,015,021
8	Pop Rivet 1/8"	908,004,001
9	Self Drilling Screw #8-18x1/2"	902,004,011
10	Latch Strike, (For Inner Door)	812,003,001
11	Latch Roller Bracket	010,516,073
12	Changer Door Hinge, Bottom	010,560,003
13	Bottom Coin Chute Assembly	010,594,014
14	Coin Box Weld Assembly	010,580,023
15	Coin Box Housing	010,537,063
16	Screw 1/4-20x1"	901,003,001
17	Nut 1/4-20	905,002,001
18	Carriage Bolt 1/4-20x1"	901,007,001
19	Bottom Lampholder, High Output	842,002,011
20	Lamp Bracket	010,517,003
21	Tie Rod, Door	811,001,001
22	Top Lampholder, High Output	842,001,011
23	Changer Door Hinge, Top	010,570,003
24	Screw #8-32x1/2" with washers	901,006,001
*	Denotes that a color must be specified	

# DR PEPPER: SELECT PANEL ASSEMBLY



## DR PEPPER SELECT PANEL ASSEMBLY

ITEM #	DESCRIPTION	PART NUMBER
1	Main Door Welded Assembly, Dr Pepper 79**	100,510,014
	Main Door Welded Assembly, Dr Pepper 72**	101,510,033
2	P.C. Board Spacer	916,027,021
3	Control Board, 11.06 (See Note #3)	836,068,051
	Control Board, 5.11 (See Note #3)	836,052,081
	Control Board, 5.06 (See Note #3)	836,052,011
4	Circuit Board Cover, Merlin III	141,903,043
5	Self Drilling Screw #8-32x1/2"	902,004,011
6	Panel Strap (optional)	010,531,003
7	Fuse Box Assembly (includes two 4 amp fuses)	012,166,004
8	Changer Plug Harness	010,914,063
9	Changer Plug Bracket-Merlin	010,561,113
10	Main Door Harness	SEE NOTE #1
11	L.E.D. Assembly	010,593,024
12	Nut #8-32	905,001,001
13	Select Button, Dr Pepper	815,073,041
14	Button Spring, Dr Pepper	914,020,001
15	Switch, Miniature	835,001,021
16	Self Tapping Screw #6-32x1/4"	901,004,021
17	Control Panel, Dr Pepper Rear 10 Select	815,087,001
	Control Panel, Dr Pepper Rear 8 Select	815,072,031
	Control Panel, Dr Pepper Rear 6 Select	815,089,001
18	Control Panel, Dr Pepper Front 10 Select	815,086,001
	Control Panel, Dr Pepper Front 8 Select	815,071,001
	Control Panel, Dr Pepper Front 6 Select	815,088,001
19	Coin Return Cup, W/A (S.N. 1218 & AFTER)	100,560,003
	Opener Coin Return Ass'y (Before S.N. 1218)	815,003,041
20	Transformer Cover, Merlin	010,063,023
21	Transformer Assembly, Merlin	010,572,033
22	Coin Return Spring/Sold Out Spring	914,003,001
23	Scavenger Link (Coin Return Plunger)	810,001,041
24	Spring Plate	010,511,003
25	Coin Chute Assembly	010,532,004
26	Coin Insert	809,006,021
	Coin Insert Ass'y, New Merlin (Includes L.E.D.)	012,910,044
27	T-Screw 8-32x3/4"	901,001,071
28	Retaining Ring	SEE NOTE #2
29	T-Handle Pin	912,133,001
30	Spring	SEE NOTE #2
31	T-Handle Body	SEE NOTE #2
32	T-Handle Assembly	812,001,011
33	Screw #4x5/8"	902,009,001
34	Lock Cylinder Cover	161,532,003
*	Denotes that a color must be specified	

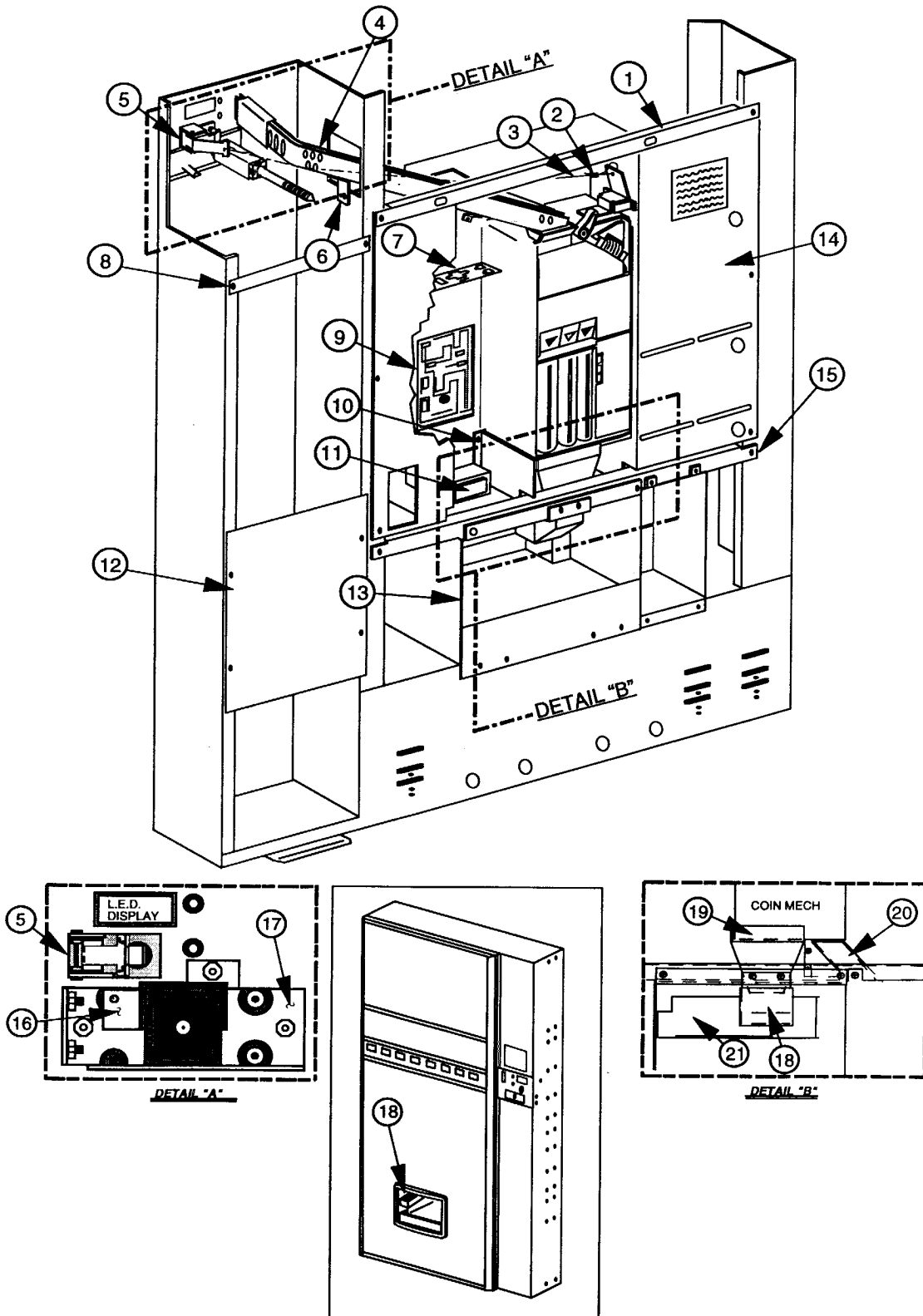
NOTE #1: There are various parts, please specify model and serial number at the time of order

NOTE #2: This part is not available individually. It must be ordered as an assembly.

NOTE #3: The control boards listed are all boards that we stock. For warranty replacements : If your board is not listed, go up to the next closest revision. Example- from a 5.02 to a 5.06



# CENTER DOOR CHANGER ASSEMBLY FLAT DISPLAY, 8 SELECT

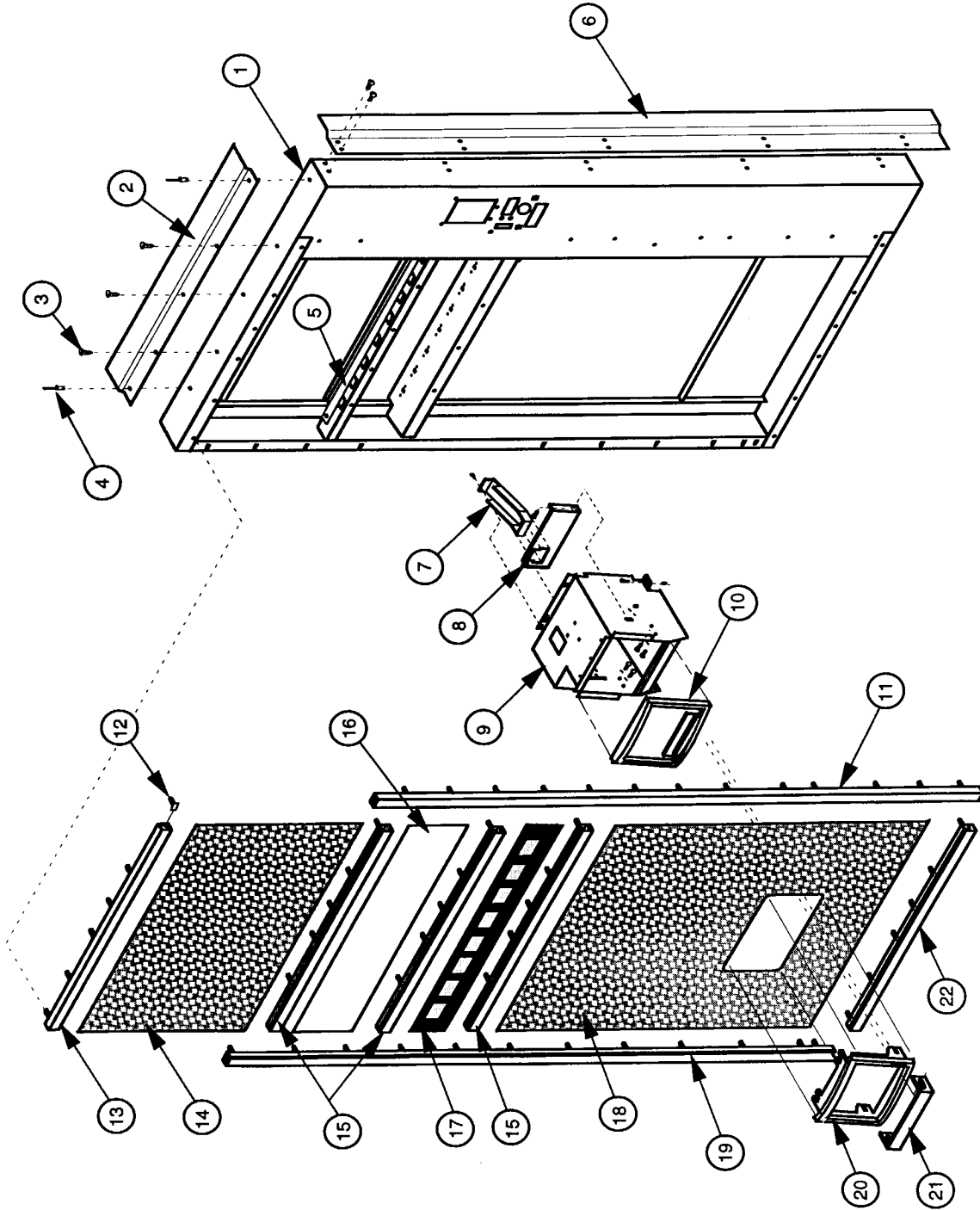


**Center Door Changer Assembly, Flat Display 8 select**

1	Changer Vault Brace	161,518,023
2	Cable Sleeve (at each end of cable)	906,015,001
3	Cable	911,032,001
4	Coin Chute, 79.5"	161,590,014
	Coin Chute, 72"	162,540,004
5	Button Lever Ass'y (See Detail "A")	161,594,004
6	Coin Chute Bracket	162,502,003
7	Changer Plug Bracket	010,561,113
8	Panel Strap	010,531,003
9	Control Board 5.11	010,561,113
10	Hopper Mounting Bracket	161,515,033
11	Transformer Assy (24V)	010,572,033
12	Select Panel Plate	161,512,033
13	Port Body Welded Assembly	222,520,033
14	Changer Vault	161,523,343
15	Port Brace-Wide	010,515,203
16	Lock Cylinder Cover (See Detail "A")	161,532,003
17	T-Handle Brace (See Detail "A")	812,001,011
18	Coin Cup DV, CDC	222,506,043
19	Coin Hopper	815,015,021
20	Coin Box Chute	231,540,003
21	Anti-Theft Plate CC CDC	231,504,043



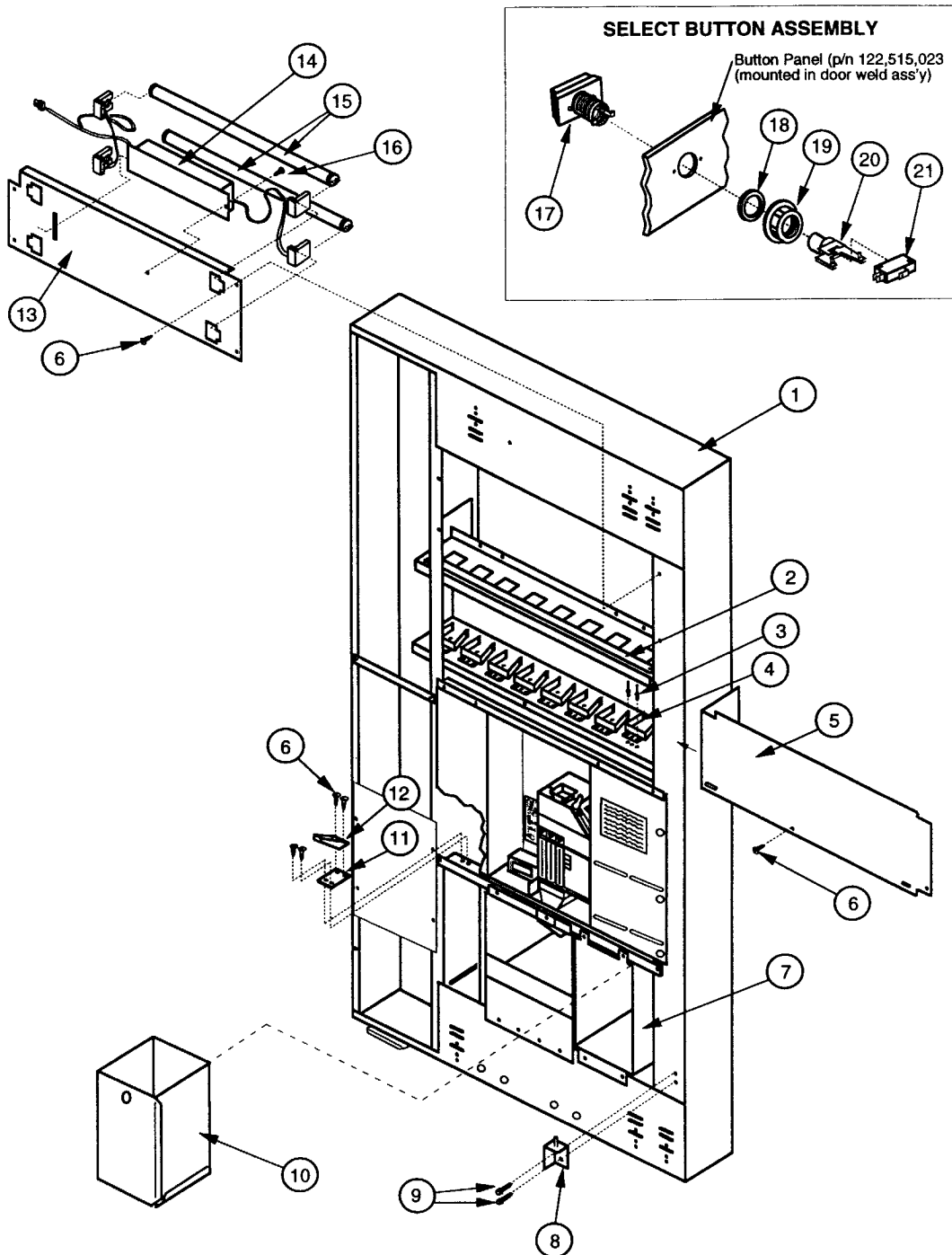
# FLAT HORIZONTAL DISPLAY DOOR FRONT, 8 SELECT



**Flat Horizontal Display, Door Front, 8 select**

1	Door Weld Assy - Flat Display 72", CDC	222,510,023
2	Rain Guard-wide	010,518,053
3	Screw #8x1/2"	902,004,011
4	Pop Rivet 1/8" dia.	908,001,011
5	Light Hole Cover	122,519,003
6	Right Vandal Panel 72"	011,501,083
7	Coin Cup DV CDC	222,506,043
8	Anti Theft Plate CC, CDC	231,504,043
9	Port Weld Assembly	222,520,033
10	Port Spacer	815,020,031
11	Trim Right Side	019,508,003
12	T-Head Screw	901,001,031
13	Trim Top Side	032,807,003
14	Sign, Cold Drink Flat Display	845,301,001
15	Trim Center	278,511,003
16	Sign Clear	845,303,001
17	Button Clear	122,515,023
18	Bottom Door Plate, Flat Display	122,504,023
19	Trim, Left Side	019,507,003
20	Port Trim	815,019,041
21	Can Stop	010,508,003
22	Trim, Bottom side	032,806,003

# FLAT HORIZONTAL DISPLAY DOOR REAR, 8 SELECT



**Flat Horizontal Display, Door Rear, 8 Select**

1	Door Welded Assembly, Flat Display 72"	222,510,023
2	Light Hole Cover	122,519,003
3	Pop Rivet 1/8" Dia	908,004,001
4	Display Product Holder	023,107,003
5	Display Back	122,502,023
6	Screw #8 x 1/2"	902,002,001
7	Coin Box Housing DV CDC	222,502,033
8	Inner Door Hinge, Top	010,520,013
	Inner Door Hinge, Bottom	010,550,014
9	Self Tapping Screw 1/4-20 x 1"	901,003,001
10	Coin Box Weld Assembly	222,550,003
11	Latch Roller Bracket	010,516,073
12	Latch Strike	812,003,001
13	Lamp Panel, Flat Display	222,509,023
14	Ballast Assembly A.V.I.	122,528,004
15	Lamp F20T12D	841,012,001
16	Screw #8-32 x 1/2" with Flat Washer	901,006,001
17	Select Button Assembly	816,016,001
18	Washer	
19	Nut	
20	Switch Holder	
21	Swith Miniature	835,001,021

## **SECTION 8: WIRING DIAGRAM**

The following page is the wiring diagram for all Pepsi-Cola, Dr. Pepper and all generic "Merlin" 2000 version 5 controllers.

For earlier wiring diagrams (including Coca-Cola diagrams), please contact your local Royal Vendors representative



**This Royal Vendors product is covered by the following patents**

**United States**

**4,359,147 5,111,962 5,193,862 5,226,521**

Licensed for use under U.S. Patent Numbers 4,216,461 and 4,369,442

*Other U.S. and foreign patents pending*



Royal Vendors Publication  
833,003,001

Rev. D 4/98

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